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18 February 1998

Eli Stanesa, Esquire
Law Department
Jervis B. Webb Company
34375 West Twelve Mile Road
Farmington Hills, Michigan 48331-5624

Subject: Phase II Soil Investigation Report for the Jervis B. Webb Company Property at 5030 Firestone Boulevard in South Gate, California (EKI 961025.02)

Dear Mr. Stanesa:

Erler & Kalinowski, Inc. ("EKI") is pleased to submit this *Phase II Soil Investigation Report* ("Assessment") for the Jervis B. Webb Company of California ("Webb") property at 5030 Firestone Boulevard in South Gate, California ("Subject Property"). This Assessment was prepared in accordance with the Agreement, dated 25 November 1997, between Webb and EKI.

Limitations of Assessment

The conclusions and recommendations presented in the attached Assessment are our professional opinion and are not a warranty or guaranty as to the presence, absence, or extent of contamination at the Subject Property or of releases from or near the Subject Property. The facts presented in the Assessment are based on available information obtained by EKI and represent existing conditions at the Subject Property at the time the information was collected. This Assessment is intended for the sole use of Webb. Unless specifically authorized by EKI, and subject to execution of an agreement between EKI and any third party in a form and content approved by EKI, use or reliance by any other entity is not permitted or authorized.

Please call if you have any questions.

Very truly yours,

ERLER & KALINOWSKI, INC.

Steven G. Miller, P.E. (Civil Engineer, Certificate 43419)
Project Manager

Attachment - Phase II Soil Investigation Report

Phase II Soil Investigation Report

5030 Firestone Boulevard
South Gate, California

18 February 1998

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Kalinowski, Inc.**

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Phase II Soil Investigation Report
Jervis B. Webb Company Property
5030 Firestone Boulevard, South Gate, California

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1. EXECUTIVE SUMMARY

Erler & Kalinowski, Inc. ("EKI") was retained by the Jervis B. Webb Company ("Webb") to perform a series of environmental investigations of the property at 5030 Firestone Boulevard in South Gate, California ("Subject Property"). The *Phase II Soil Investigation Report* summarizes investigations of the Subject Property completed by EKI through December 1997. A brief summary of the major findings of EKI's investigations at the Subject Property follows:

1. The Subject Property consists of a single parcel of land approximately 1.4 acres in size and contains one single-story former manufacturing building of approximately 20,000 square feet. The property was apparently developed between 1950 and 1953.

2. Blake Rivet Company ("Blake") manufactured aircraft rivets at the Subject Property from the 1950s until approximately 1980. Blake's manufacturing process at the Subject Property included an above ground anodizing operation that generated wastewater. Wastewater was discharged, pursuant to a permit, to a three-stage clarifier and then to the sanitary sewer. Blake apparently stored a number of raw materials at the Subject Property including metal stock and anodizing solutions. Documents available to EKI did not identify historical use or storage of chlorinated organic solvents at the Subject Property.

3. Following Blake, Webb used the Subject Property for storage of metal stock, equipment and other materials. The concrete area at the location of the clarifier was also used by Webb for temporary storage of drums of hazardous wastes. The clarifier was not used by Webb. EKI completed an initial inspection of the Subject Property on 10 April 1996. No drums or significant staining of concrete or asphalt around the clarifier was observed by EKI during the site inspection. Currently, the property is unoccupied and has been cleared of all equipment and materials. The clarifier is currently filled with sand.

   Webb manufacturing operations were primarily located on the adjacent off-site property at 9301 Rayo Avenue ("Rayo Property"). Webb's activities at 9301 Rayo Avenue included metal fabrication, finishing, painting and assembly operations associated with the manufacture of industrial conveyor systems.

4. EKI observed indications of below ground concrete structures at several locations in the building. These include a concrete-lined sump and a shallow concrete-lined machine trench. The concrete floor in the building contains numerous patches where former structures or improvements may have been located. Concrete in the former anodizing area of the building is pitted, etched, broken and or cracking in several areas.

5. On 28 October 1997, Vironex, Inc. ("Vironex") of El Segundo, California completed fourteen soil borings at the Subject Property. The objective of the soil investigation was to provide chemical data to determine whether chemical releases occurred in former chemical use and storage areas at the Subject Property. Soil was cored to maximum depths ranging from approximately 10 feet below ground surface ("ft bgs") at various locations inside and outside the building, and to 20 ft bgs in the immediate vicinity of the clarifier. Soil samples were analyzed for pH by EPA Method 9045, total extractable petroleum hydrocarbons ("TEPH") by EPA Method 8015 modified, California Code of Regulations Metals ("CCR-Metals"), and volatile organic compounds ("VOCs") by EPA Methods 8240 and 8010.

6. Fourteen soil samples were analyzed for CCR metals. CCR metals were not detected at elevated concentrations in soil samples collected from beneath and around the clarifier and from other former process areas. Only one of the fourteen analyses for metals had a detectable concentration of hexavalent chromium, sample B4-10.5 had a concentration of 0.88 milligrams per kilogram ("mg/kg"). Samples of soil from above and below sample B4-10.5 (samples B4-6 and B4-16) did not have detectable hexavalent chromium.

7. TEPH was not detected in any of the ten soil samples analyzed for it. Soil pH was found to range from 6.3 to 8.8 in the samples analyzed.

8. VOCs were detected in samples of soil collected during the October 1997 soil investigation. Trichloroethene ("TCE") and tetrachloroethene ("PCE") were detected at maximum concentrations of 270 mg/kg and 140 mg/kg, respectively, in one soil sample (B4-20.5) collected from approximately 20 ft bgs beneath the clarifier. TCE and PCE were detected in most of the soil samples collected during October 1997 in the area of the former anodizing operations and, except for samples from boring B4, were detected at concentrations of less than 1 mg/kg. No other VOCs were detected.

9. On 1 and 2 December 1997, Interphase, Inc. ("Interphase") of Commerce, California completed a soil gas survey at the Subject Property. The objective of the soil gas survey was to provide additional subsurface data to identify potential source areas for the VOCs detected in samples of soil collected during the October 1997 investigation. Soil gas samples were collected from 37 separate locations at a depth of approximately 5 ft bgs and analyzed for 23 VOCs consistent with California Regional Water Quality Control Board - Los Angeles Region ("RWQCB") Primary Target Compounds.

   The analytical data from the soil gas survey indicated that TCE and PCE are the primary chemicals of concern in shallow soil at the Subject Property. TCE was detected at concentrations ranging from 0.074 micrograms per liter ("ug/L") to 25 ug/L. PCE was detected at concentrations ranging from 0.021 ug/L to 28 ug/L. 1,1,1-Trichloroethane ("1,1,1-TCA") was also detected at low concentrations in approximately half of the soil gas samples with a maximum of 0.89 ug/L.

Chloroform, dichlorodifluoromethane ("Freon-12"), and trichlorofluoromethane ("Freon-11") were also detected in a few samples at low concentrations.

10. On 2 and 3 December 1997, West Hazmat Drilling Corporation ("West Hazmat") of Anaheim, California completed five deep soil borings at the Subject Property. The purpose of the deep soil investigation was to determine the vertical extent of VOC occurrence in unsaturated soil beneath the clarifier and anodizing area. Soil borings were completed to maximum depths ranging from 46.5 to 62.5 ft bgs. Groundwater was encountered at a depth of approximately 57 ft bgs. Soil samples were analyzed for VOCs by EPA Method 8010. Additional soil samples were analyzed for geotechnical properties.

11. TCE and PCE were detected in samples of soil collected during the December 1997 investigation. TCE was detected at concentrations ranging from 0.048 mg/kg to 16 mg/kg. PCE was detected at concentrations ranging from 0.026 mg/kg to 0.66 mg/kg. TCE was detected in the deepest soil samples collected from each boring completed during the December 1997 investigation at concentrations ranging from 1.3 mg/kg to 8.7 mg/kg.

12. During the December 1997 investigation, twelve soil samples were selected for geotechnical analyses including total carbon by the Walkley-Black method, moisture content by ASTM Method D2216, dry density by ASTM Method D2937, and effective permeability and air conductivity by API Method RP40. The soil samples analyzed for geotechnical properties were selected to represent most of the geologic materials encountered in the vadose zone. Analytical results indicate significant soil moisture and total carbon concentrations in the vadose zone. Moisture content ranged from 7% to 39.9%. Total organic carbon ranged from not detected to a concentration of 1.11%. Dry soil density ranged from 82.8 pounds per cubic foot ("pcf") to 112.8 pcf. Of twelve samples analyzed for air conductivity and effective permeability, six samples did not conduct air.

On the basis of the results of investigations conducted to date it appears that further actions are necessary to address the presence of VOCs in the subsurface at the Subject property.

2. INTRODUCTION

On behalf of Jervis B. Webb Company ("Webb"), Erler & Kalinowski, Inc. ("EKI") is pleased to present this *Phase II Soil Investigation Report* for the property located at 5030 Firestone Boulevard in South Gate, California ("Subject Property").

Webb retained EKI to perform a soil investigation to investigate chemical releases associated with former manufacturing at the Subject Property. Previous activities and areas of environmental concern at the Subject Property were identified in a *Phase I Environmental Site Assessment* by EKI dated 20 June 1996.

EKI's soil investigations included identification of subsurface lithologies, chemical analyses of soil and soil gas samples, analyses of soil geotechnical properties, and determination of the depth to groundwater.

EKI's investigations of the Subject Property were performed in accordance with applicable guidelines and general requirements of the California Regional Water Quality Control Board, Los Angeles Region ("RWQCB") concerning subsurface investigations. EKI investigation activities were performed under the supervision of Mr. Steven G. Miller, P.E., a State of California registered civil engineer.

3. DESCRIPTION OF SUBJECT PROPERTY

3.1. Location and Size of Subject Property

The Subject Property is located at 5030 Firestone Boulevard in South Gate, California (see Figure 1, USGS, 1964). The Subject Property is bounded to the northwest by Firestone Boulevard. To the east and southeast are commercial/industrial properties. To the south and southeast is the 9301 Rayo Avenue property ("Rayo Property") that was also formerly occupied by Webb. Along the southwest side of the Subject Property are Union Pacific railroad tracks. An easement containing a large underground storm drain is located along the westerly side of the Subject Property. The Subject Property is approximately 1.4 acres in size (Webb, 1995).

3.2. Current Site Features

The Subject Property contains a single-story, former manufacturing building. The building occupies an area of roughly 20,000 square feet (Webb, 1995). The roof of the building contains several vents of various dimensions. The floor of the building consists of a concrete slab of variable thickness. The locations of key site features are shown on Figure 2. A more detailed description of current site conditions is provided in the summary of site background information in Appendix A.

The area around the building is covered with asphalt or concrete except for a planted area at the north end of the building. An out-of-service railroad spur passes through the west side of the parcel toward the southern boundary of the Property. A large underground storm drain passes through the Subject Property approximately parallel to the western property line and proceeds to the southeast through the Rayo Property. A utility line which EKI believes to be a sanitary sewer pipeline crosses the eastern side of the Subject Property and proceeds through the Subject Property toward the Rayo Property where is apparently discharges to a sewer line in Rayo Avenue. Former electrical and telephone service enter the property via overhead lines extending into the property also from the northeast. No pole-mounted or other transformers were observed within the property. A natural gas meter was observed on the southeast side of the building. The entrance to the Subject Property from Firestone Boulevard has been temporarily fenced. Access to the property is currently through the adjacent property located at 9301 Rayo Avenue.

3.3. Historical Site Use and Agency Records Reviews

EKI has reviewed documents provided by Webb, historical aerial photographs, and selected regulatory agency files. A summary of site background information obtained from EKI's review of these documents is provided in Appendix A.

4. REGIONAL HYDROGEOLOGICAL CONDITIONS

Unless otherwise noted, the information provided in this section was obtained from the California Department of Water Resources ("DWR") *Bulletin No. 104: Planned Utilization of the Groundwater Basins of the Coastal Plain of Los Angeles County, Appendix A, Groundwater Geology* dated June 1961.

The Subject Property is located in the Central Basin Pressure Area of the Central Basin of the Coastal Plain of Los Angeles County. Ground surface elevation at the Subject Property is roughly 110 feet above mean sea level (USGS, 1964). The surface topography of the Subject Property and vicinity appears to slope gently to the southeast in the general direction of the Los Angeles River. The Los Angeles River is located approximately 1,200 feet east of the Subject Property at its nearest location (see Figure 1, DWR, 1964).

The Subject Property is located within the Downey Plain, an alluvial depositional feature of Recent age that extends across the central lowland areas of the Central Basin. Depositional materials associated with this feature were deposited as alluvial fans formed by the Los Angeles and Rio Hondo-San Gabriel River systems. These alluvial systems have formed a very gentle plain. However, during past flood times these large rivers have produced some erosional terraces and deposited debris over most of the area. The materials associated with the Downey Plain are also referred to as Recent Alluvium. Little deformation of the Recent alluvial sediments has occurred except where they cross techtonically active areas.

The Subject Property is located along the northern axis of the Paramount Syncline, a depressional deformation feature trending northwest-southeast in the vicinity of the Subject Property. This structure was formed by the Early Pleistocene deformation of the Central Basin. The trough-shaped geometry of this structure has produced folding of Early Pleistocene deposits of primarily the Lakewood and San Pedro Formations. According to DWR, no displacement of aquifers is apparent in the vicinity of the Subject Property.

The water-bearing materials composing the groundwater basin in the vicinity of the Subject Property are Recent to Pliocene in age. These materials include unconsolidated and semi-consolidated marine and non-marine alluvial sediments. Sizes of individual particles grades from course gravel and boulders to clay. Following is a description of the major aquifers that comprise the groundwater basin in the vicinity of the Subject Property.

4.1. Regional Aquifers

The area of the Subject Property is underlain by several major hydrostratigraphic units within three geological formations: the Recent Alluvium, Lakewood Formation and San Pedro Formation. In the vicinity of the Subject Property the Recent Alluvium is present from surface elevation (110 feet above mean sea level "ft. msl") to approximately 20 to 80 ft bgs. The Recent Alluvium is apparently comprised of the Bellflower Aquiclude and Gaspur Aquifer. However, it is apparent that the Gaspur Aquifer may be partially or completely absent in the immediate vicinity of the Subject Property. In the absence of the Gaspur aquifer, an unnamed confining layer of the Lakewood Formation would compose a portion of the subsurface materials between 20 and 80 ft bgs. (Plates 6A and 6E, DWR, 1961).

The first aquifer in the vicinity of the Subject Property appears to be the Exposition Aquifer of the Lakewood Formation. The Exposition Aquifer reportedly begins at about 80 to 90 feet below ground surface and is roughly 100 to 120 feet thick. Underlying the Exposition Aquifer is an unnamed confining layer that may be present in substantial thickness in the vicinity of the Subject Property. Beneath the unnamed confining layer and/or Exposition Aquifer is the Gage Aquifer which is also part of the Lakewood Formation. The Gage Aquifer appears to begin at approximately 220 to 300 ft bgs, depending on the thickness of the unnamed confining layer, and is roughly 50 to 90 feet thick.

Beneath the Lakewood Formation is the San Pedro Formation which consists of, in descending order, a significant unnamed aquiclude, Jefferson Aquifer, Lynwood Aquifer, Silverado Aquifer, and Sunnyside Aquifer. The Jefferson, Lynwood and Silverado aquifers range in thickness from 80 to 250 feet thick in the vicinity of the Subject Property and may be interbedded by minor confining layers. The base of the Silverado Aquifer is approximately 930 to 950 ft bgs. The Silverado and Sunnyside Aquifers are interbedded by an unnamed confining layer approximately 260 to 340 feet in thickness. The Sunnyside Aquifer is 300 feet thick in the vicinity of the Subject Property. (Plates 6A and 6E, DWR, 1961).

Underlying the San Pedro Formation are the Pliocene marine sediments of the Pico Formation. Although portions of the Pico Formation may be sufficiently permeable to transmit water, the water is of poor quality and unsuitable for general use.

4.2. Regional and Local Groundwater Flow

According to the Water Replenishment District of Southern California ("WRD"), deep aquifer groundwater contours for water year 1995-1996 indicate southwesterly trending groundwater flow from the Whittier Narrows area into the Central Basin Pressure Area with a gradient of approximately 0.007 feet per foot. Depth to groundwater in the vicinity of the Subject Property is indicated to be approximately 80 to 90 ft bgs. (WRD, 1997)

Based on groundwater monitoring data from the Dial Corporation site, across Rayo Avenue and several hundred feet southeast of the Subject Property, groundwater flow is in a southerly direction at a gradient of approximately 0.003 feet/foot. The depth to groundwater in two monitoring wells located along Rayo Avenue ranged from about 45 to 55 ft bgs from April 1992 to April 1995. One well on the Dial Corporation site was found to have shallower perched groundwater (EMCON, 1995). Bechtel, however, reported that groundwater flow in the "upper group of aquifers" is to the north-northwest. (Bechtel 1994, page 6)

Actual depth to groundwater at the Subject Property was found to be approximately 57 ft bgs at the southeasterly boundary during investigations by EKI. The direction of groundwater flow in the water table aquifer beneath the Subject Property has not been determined.

5. SUBSURFACE INVESTIGATIONS

On 28 October 1997, Vironex, Inc. ("Vironex") of El Segundo, California, completed fourteen soil borings at the Subject Property to maximum depths ranging from 10 to 20 ft bgs. The objective of this soil investigation was to determine if chemicals of concern are present in soil at the Subject Property. Soil samples were analyzed for pH using EPA Method 9045, California Code of Regulation Metals ("CCR-Metals"), total extractable petroleum hydrocarbons ("TEPH") using EPA Method 8015 modified, and volatile organic compounds ("VOCs") using EPA Methods 8260 and 8010.

On 1 and 2 December 1997, Interphase, Inc. ("Interphase") of Commerce, California completed a soil gas survey at the Subject Property. The objective of the soil gas survey was to provide additional subsurface data to identify potential source areas for VOCs detected in soil collected during the October 1997 investigation. Soil gas samples were collected from 37 separate locations at a depth of approximately 5 ft bgs. Soil gas samples were analyzed for 23 VOCs in accordance with the RWQCB's Well Investigation Program ("WIP") Primary Target Compounds list.

On 2 and 3 December 1997, West Hazmat Drilling Corporation ("West Hazmat") of Anaheim, California completed five deep soil borings at the Subject Property. The purpose of the deep soil investigation was to provide additional data for characterization of the distribution of VOCs in the vadose zone and soil geotechnical properties. Soil borings were completed to maximum depths ranging from 46.5 to 62.5 ft bgs. Groundwater was determined to be present at a depth of approximately 57 ft bgs. Soil samples were analyzed for VOCs using EPA Method 8010.

The locations of soil borings and soil gas sampling locations at the Subject Property are shown on Figure 3. Field and analytical procedures performed during the investigations are described below. Analytical results for the soil gas survey and soil investigations are summarized below and provided in Tables 1 and 2, respectively. Results of soil geotechnical testing are summarized in Table 3. Contours of VOC concentrations detected in shallow soil gas are presented on Figures 4 through 6. Analytical results for soil sampling are presented on Figures 7 and 8. Boring logs containing lithologic descriptions of soil and depths of soil samples retained for analyses are provided in Appendix B. A complete report by Interphase, describing soil gas survey procedures and analytical data, is provided in Appendix C. Laboratory analytical data and Chain-of-Custody forms for soil samples are attached in Appendix D. Laboratory data and Chain-of-Custody forms for soil geotechnical testing are attached in Appendix E.

5.1. Field Procedures

5.1.1. Geophysical Surveys

EKI contracted with Spectrum Environmental Services, Inc. of San Fernando, California to conduct subsurface geophysical surveys of utilities located near each proposed drilling location at the Subject Property. Spectrum performed geophysical surveys on 24 October 1997 and 1 December 1997. Underground Services Alert ("USA" or Dig Alert) was notified 48-hours prior to the commencement of ground penetrating activities on 28 October 1997 and 1 through 3 December 1997.

5.1.2. Shallow Soil Boring Investigation

Coring of soil beneath the Subject Property on 28 October 1997 was performed by Vironex. EKI performed lithologic logging and selection of soil samples for chemical analysis and geotechnical testing. Soil lithologic classification was performed in accordance with the Unified Soil Classification System ("USCS"). Soil color descriptions were graded according to Munsell Soil Color Chips. Soil boring logs were approved by Ms. Beth Lamb, R.G., C.E.G., C.H., a State of California registered geologist. (see Appendix B)

Fourteen soil borings (B1 through B14) were completed as part of the October 1997 soil investigation (see Figure 3). Eleven soil borings were located in the central and southerly portions of the Property near the location of the clarifier, the former anodizing area, the former furnace pit, and near several suspected underground structures (described in Section 3.6.2.). Two additional soil borings (B12 and B13) were located in the northwest corner of the building in the former wire storage/receiving area, where additional concrete patches were observed by EKI. A final soil boring (B14) was installed in the parking lot north of the building for the purpose of collecting background soil samples for potential analysis of CCR-Metals pending results for soil samples collected in the former anodizing and clarifier areas. Samples from boring B14 were not analyzed.

Soil samples retained during the October 1997 soil investigation were collected from approximately 5-feet intervals from depths ranging from 2 ft bgs to 20 ft bgs. Soil borings B2, B3, and B5 through B14 were completed to approximately 10 ft bgs. Soil borings B1 and B4, located adjacent to the clarifier, were completed to approximately 20 ft bgs. Because the clarifier is located within an exterior building corner with limited access, borings B1 and B4 were situated at the nearest safe working distance to the clarifier. Boring B4 was installed at an angle of approximately 15 degrees from vertical to access soil beneath the clarifier at the maximum specified depth of 20 ft bgs.

Soil borings were completed using a Vironex half-ton truck with a Geoprobe sampling probe ("Soil probe"). The Soil probe utilized a 2-feet long by 1.5-inch outer diameter soil sampler and 1.5-inch outer diameter probe sections. The soil sampler, containing four pre-cleaned, 6-inch brass liners, was driven approximately 24 inches into undisturbed soil at each sampling interval, then retrieved and disassembled. One or two sample liners

were retained for laboratory chemical analysis at each sampling interval. Remaining sample liners were utilized for soil lithologic classification. Soil samples that were not retained for laboratory testing were placed into a DOT-approved 35-gallon drum for later disposal.

Soil sample liners retained for laboratory chemical analysis were removed from the sampler and separated with a clean knife. The ends of the brass tube containing the each sample were covered with Teflon sheets and capped with plastic end caps. A sample label that included a unique sample identification number, the sample depth, the time, and the date when the sample collected was attached to each brass liner. Samples to be delivered to the laboratory for chemical analysis were sealed in zip-lock plastic bags and placed in a cooler with ice for temporary storage and transport to the laboratory. Chain-of-Custody forms were initiated in the field and included with the samples. Chain-of-Custody Forms are included in Appendix D.

All downhole pieces of the soil boring and sampling equipment were decontaminated prior to their use and between sample locations. Between sampling intervals, the soil sampling tool and brass sample liners were cleaned in an Alconox solution, then rinsed in potable and distilled water. The rinse water generated during decontamination was contained on-site.

5.1.3. Soil Gas Survey

Soil probe installation and soil gas sample collection on 1 and 2 December 1997 was performed by Interphase. EKI observed soil boring installation and soil gas collection procedures and documented the work. The soil gas survey was performed in accordance with RWQCB guidelines for active soil gas investigations under the Well Investigation Program, dated February 1997. Sample analyses included the RWQCB's Primary Target Compounds list of 23 VOCs. Interphase procedures for soil gas sample collection are described in the Interphase Soil Gas Survey Report in Appendix C.

Thirty-seven shallow soil borings (SG1 through SG37) were completed for collection of soil gas samples (Figure 3). Soil gas sampling locations were situated in positions surrounding suspected source areas in the central and southerly portions of the building near the location of the clarifier, the former anodizing area, the former furnace pit and several suspected underground structures. Additional soil gas sampling locations were positioned near the boundaries of the Subject Property and areas outside the former manufacturing building. Soil gas samples were collected from approximately 5 ft bgs, except at three locations (SG29 through SG31) where refusal was encountered at 2 to 3 ft bgs.

Soil borings for soil gas sample collection were completed using an Interphase van equipped with a Soil probe. The soil probe utilized a 2-feet long by 1.5-inch outer diameter soil gas sampler attached to 1.5-inch outer diameter probe sections. No drill cuttings were generated during the soil gas survey. Interphase soil gas sample collection

methods and sampling apparatus are described in the Interphase Soil Gas Survey Report in Appendix C.

All downhole pieces of the soil boring and sampling equipment were decontaminated prior to their use and between sample locations and distinct sampling depths. Between sampling intervals, the soil probes were cleaned in an Alconox solution, then rinsed in potable and distilled water. The rinse water generated during decontamination was contained on-site in a DOT-approved 55-gallon drum for later disposal.

5.1.4. Deep Soil Boring Investigation

Additional soil coring and sampling was performed on 2 and 3 December 1997 by West Hazmat. EKI performed lithologic logging and soil sample selection for chemical analyses and geotechnical testing. Soil sample handling and soil lithologic characterization was performed in accordance with procedures described in Section 5.1.2. Boring logs are provided in Appendix B.

Five soil borings (B15 through B19) were completed as part of the December 1997 soil investigation (Figure 3. Three soil borings (B15 through B17) were located at positions at a lateral distance of approximately 50 feet surrounding the clarifier. Soil borings B18 and B19 were positioned at locations adjacent to the clarifier.

Soil samples retained during the December 1997 soil investigation were collected from several depth intervals. Soil boring B15, situated to the northwest of the clarifier, was completed to approximately 52.5 ft bgs using continuous core sampling with a Soil probe. The remaining soil borings were installed using a hollow-stem auger. Soil boring B16, situated to the south of the clarifier, was completed to approximately 51.5 ft bgs. Soil samples were collected at approximately 5-feet intervals from at location B16. Soil boring B17, located to the southeast of the clarifier, was completed to approximately 62.5 ft bgs.
After advancing soil boring B17 to total depth at 62.5 ft bgs, West Hazmat lowered a water level indicator through the auger casing. The groundwater surface was present at a depth of approximately 56.9 ft bgs. Soil samples were collected at approximately 2.5-feet intervals at location B17. Soil borings B18 and B19 were completed to approximately 46.5 ft bgs. Soil samples were collected at approximately 5-feet intervals at locations B18 and B19.

Soil borings were completed using a West Hazmat track-drive limited access rig ("LAR"). The LAR was equipped with a soil sampling probe and a hollow-stem auger. The Soil probe utilized a 2-feet long by 2-inch outer diameter soil sampler and 2-inch outer diameter probe sections. Drill cuttings generated with the use of the Soil probe were placed into a DOT-approved drum already present on-site. Hollow-stem auger drilling was completed using 8.25-inch outer diameter augers. Soil sample collection during auger drilling was accomplished using a California-modified, 2-feet long by 2-inch outer diameter soil sampler. Soil cuttings generated using the hollow-stem auger method were placed in DOT-approved 55 gallon drums for later disposal.

All downhole pieces of the soil boring and sampling equipment were decontaminated prior to their use and between sample locations. Between sampling intervals, the soil probes or auger casings were steamcleaned using a West Hazmat mobile decontamination trailer. Soil sampling tools and brass sample liners were cleaned in an Alconox solution, then rinsed in potable and distilled water. The rinse water generated during decontamination was contained in DOT-approved, 55-gallon drums for later disposal.

5.2. Summary of Soil Gas Survey Results

5.2.1. Analytical Results for Soil Gas Survey

Soil gas samples were analyzed by Interphase in a mobile laboratory situated inside the Interphase van. Soil gas samples were analyzed using gas chromatographic techniques. For a complete description of analytical methods and instrumentation used for the soil gas survey, please refer to the Interphase Soil Gas Survey Report in Appendix C.

The analytical results for soil gas samples are summarized in Table 1 and graphically on Figures 4 through 6. TCE, PCE, 1,1,1-TCA, chloroform, dichlorofluoromethane ("Freon-12") and trichlorofluoromethane ("Freon-11") were detected in soil gas samples. TCE and PCE were detected in most soil gas samples analyzed. 1,1,1-TCA was also detected at low concentrations in approximately half of the soil gas samples.

Concentrations of TCE detected in samples of shallow soil gas ranged from 0.13 ug/L to 25 ug/L. As shown on Figure 4, the highest concentrations of TCE were detected in samples of soil gas collected in the southeast corner of the Subject Property. The highest soil gas detection of TCE was from the sample collected from location SG36, located at the boundary of the Subject Property (Figure 3). Soil gas samples collected from points immediately surrounding the clarifier were found to contain TCE at concentrations ranging from 3.9 ug/L at location SG3 to 13 ug/L at location SG10.

Concentrations of PCE detected in samples of shallow soil gas ranged from 0.021 ug/L to 28 ug/L. As shown on Figure 5, the highest concentrations of PCE were detected samples of soil gas collected in the southeast corner of the Subject Property. The highest soil gas detection of PCE was from the sample collected from location SG10, located approximately 10 feet northeast of the anodizing area trench (Figure 3). Soil gas samples collected from points in the clarifier area were found to contain PCE at concentrations ranging from 1.6 ug/L at location SG3 to 28 ug/L at location SG10 (Figure 3).

Concentrations of 1,1,1-TCA were detected in approximately half of the soil gas samples collected. Concentrations of 1,1,1-TCA detected in samples of soil gas ranged from 0.013 ug/L at location SG6 to 0.89 ug/L at location SG22, located adjacent to the furnace pit area. As shown on Figure 6, the highest concentrations of 1,1,1-TCA in soil gas appear to be centered in the southeast corner of the Subject Property.

Chloroform, dichlorofluoromethane ("Freon-12") and trichlorofluoromethane ("Freon-11") were also detected at low concentrations in several soil gas samples. Chloroform was detected at concentrations ranging from 0.038 ug/L to 0.058 ug/L in soil gas samples from locations SG1, SG9, SG10, SG14, SG22 and SG36 (Figure 3). Freon-11 was detected in soil gas samples from locations SG22 and SG33 at concentrations of 0.010 ug/L and 0.032 ug/L, respectively. Freon-12 was detected at a concentration of 1.2 ug/L in soil gas at location SG33.

Interphase collected a duplicate sample from location SG23 for off-site compound confirmation analysis by EPA Method TO-14 at an independent laboratory. This sample was analyzed by Environmental Analytical Service, Inc. ("EAS") of San Luis Obispo, California. Results of the duplicate sample analysis by EAS are discussed below.

5.2.2. Quality Assurance/Quality Control for Soil Gas Survey

Quality Assurance/Quality Control ("QA/QC") for the Soil Gas Survey is discussed in detail in the Interphase Soil Gas Survey Report in Appendix C. For the survey, Interphase collected a system blank and ambient air sample prior to sample collection each day. As discussed above, one duplicate sample was collected and analyzed at an independent laboratory. Additional QA/QC procedures included a purge volume versus analyte concentration test at the first soil gas sampling location and mid-point calibration checks. The percent relative deviation of the mid-point calibration checks were within WIP QA/QC guidelines.

The compound confirmation sample analyzed by EAS confirmed the compounds detected by Interphase. In addition, EAS detected methylene chloride, styrene, toluene and xylenes in the sample. However, the additional compounds detected by EAS were detected at concentrations which are near or below Interphase's reporting limits for these compounds.

5.3. Summary of Soil Sampling Results

5.3.1. Analytical Results for Soil Sampling

The analytical results for soil samples are summarized in Table 2, 3, 4 , and 5. Concentrations of PCE and TCE detected in soil are also summarized on Figures 7 an 8. Laboratory analysis reports with Chain-of-Custody Forms are attached in Appendix D.

Soil samples collected during the 28 October 1997 soil investigation were analyzed by Orange Coast Analytical, Inc. ("Orange Coast") of Tustin, California for pH by EPA Method 9045, TEPH by EPA Method 8015 modified, CCR-Metals, and VOCs by EPA Methods 8240 and 8010. Soil samples collected during the 2 and 3 December 1997 soil investigation were analyzed by Orange Coast for VOCs using EPA Method 8010.

Nine soil samples collected from locations adjacent to the clarifier and former process areas were analyzed for pH. The analytical results for these analyses indicate that soil pH values ranged from 6.3 to 8.8. The results of pH analyses are summarized in Table 3.

Of ten soil samples analyzed for TEPH, none were found to contain TEPH above method detection limits. See Table 4 for a summary of these analyses.

Fourteen soil samples were analyzed for CCR-Metals. One soil sample was found to contain hexavalent chromium at a concentration of 0.88 milligrams per kilogram ("mg/kg"). However, no other soil samples had detectable hexavalent chromium. Metals concentrations appeared to be within acceptable ranges and indicative of indigenous concentrations in soil. Results of metals analyses are summarized in Table 5.

TCE and PCE were the only VOCs were detected in samples of soil collected during the October and December 1997 soil boring investigations. TCE and PCE were detected at maximum concentrations of 270 mg/kg and 140 mg/kg in one soil sample (B4-20.5) collected from approximately 20 feet below ground surface ("ft bgs") beneath the clarifier. At surrounding sampling locations, VOCs concentrations in soil samples typically ranged from 0.003 mg/kg to 0.13 mg/kg. Results of VOC analyses are summarized in Table 5 and in Figures 7 and 8.

Analytical results for soil samples collected during the December 1997 soil investigation indicate that TCE and PCE were detected in deep vadose zone soil to a depth of at least 53.5 ft bgs. Soil samples collected from each of the five deep soil borings (B15 through B19) at a depth of approximately 46 ft bgs had detected concentrations of TCE ranging from 1.3 mg/kg to 8.7 mg/kg. Concentrations of PCE detected in soil collected at 46 ft bgs were significantly lower, ranging from non-detect to 0.18 mg/kg at B18 and B19.

5.3.2. Quality Assurance/Quality Control for Soil Chemical Analyses

Standard laboratory QA/QC procedures used for the project included method blanks and matrix spikes/matrix spike duplicates. Percent recovery matrix spikes and matrix spike duplicates was within acceptable ranges. No detections were found in method blanks analyzed for the project. QA/QC results are provided with the laboratory reports in Appendix D.

5.3.3. Soil Geotechnical Testing Results

Twelve soil samples were selected for geotechnical analyses. These analyses were performed to provide data for a possible future fate and transport modeling or evaluation and design of remedial alternatives. The soil samples selected for geotechnical testing were chosen from depths and lithologies considered generally representative of the various geologic materials present in the vadose zone. Geotechnical analyses included total organic carbon by the Walkley-Black method, moisture content by ASTM Method D2216, dry density by ASTM Method D2937, and effective permeability and air

conductivity by API Method RP40. See Table 3 for results of geotechnical testing. Laboratory data sheets and Chain-of-Custody forms are attached in Appendix D.

As shown in Table 6, moisture content ranged from 7 to 39.9 percent and total organic carbon ranged from 0.10 to 0.96 percent. Of twelve samples analyzed for air conductivity and effective permeability, six samples did not conduct air. The remaining soil samples had effective permeabilities ranging from 0.4 millidarcies to 1246.4 millidarcies. Comparable air conductivity results for these samples ranged from $5.2x10^{-7}$ to $8.2x10^{-5}$. The sample with the highest air permeability corresponds to a thin bed of well-graded fine to medium grained sand at a depth of 36 ft bgs from soil boring B16. Only one soil sample (B16-16.5) collected from the shallow vadose zone was found to have measurable air conductivity properties. The remaining samples of soil that exhibited measurable air flow were collected from depths of 36 to 46 ft bgs.

5.3.4. Characterization of Vadose Zone Soils

Soil present in the vadose zone beneath the Subject Property are predominantly silts with variable clay and sand content. However, clay and sandy soils are also present. The vadose zone is characterized by interbedded clayey, silty and sandy beds which appear to be lenticular but largely continuous in structure over the investigation area. These sediments are probably associated with the Downy Plain alluvium as discussed in Section 4. Due to the nature of deposition of these sediments, stream channel and overbank splay deposits associated with the Quaternary fluctuations of Los Angeles River, it is possible that the structure and presence of various lithologies in the vadose zone is variable laterally as well as vertically in the immediate area of the Subject Property.

Several recognizable lithologies were observed to be present in all five borings. In particular, a moderately to highly plastic clay unit of variable thickness ranging from approximately 1 to 5 feet was observed at depths of approximately 24 to 26 ft bgs in all five deep soil borings (borings B15 to B19). This unit appears to be thinner in the vicinity of soil borings B18 and B19. The clay unit is overlain and underlain by silty materials. A pronounced sandy unit was observed in all five borings at a depth of approximately 34 to 36 ft bgs. This unit also varies in thickness, ranging from approximately 1 to 4 feet thick. See Figures 9 and 10 for an illustration of vadose lithology at the subject property. Boring logs are attached in Appendix B.

6. FINDINGS

6.1. Chemicals of Concern

EKI's investigations included sampling and analysis of soil gas for VOCs and soil for VOCs, metals, pH and TEPH. On the basis of the analyses completed it appears that VOCs, specifically TCE and PCE, are present in the vadose soil at the Subject Property at concentrations which warrant further investigation. Other chemicals do not appear to warrant further investigation.

6.2 Potential Source Areas

The clarifier and former anodizing operation area appears to be the location of past releases of TCE and PCE. The highest VOC concentrations were detected in the general area of the clarifier and former anodizing operations. The soil sample (B4-20.5) with the highest TCE and PCE concentrations was collected beneath the clarifier. Based on sampling results, no other significant potential source area was identified.

6.3 Distribution of TCE and PCE in Vadose Soil

Concentrations of TCE and PCE detected in shallow soil were relatively low compared to concentrations of these chemicals detected in deeper soil samples. Both TCE and PCE were detected in most of the shallow soil samples collected in the area of the clarifier and former anodizing operations. The highest concentrations of TCE and PCE detected in soil samples from 11 ft bgs or less were 0.11 mg/kg and 0.40 mg/kg, respectively, both in sample B18-11 next to the clarifier.

The highest concentrations of TCE and PCE detected at the site were in deep soil samples (between 20 ft bgs to 46 ft bgs) from borings B4, B18, and B19 next to the clarifier. The highest concentration of each was detected in soil sample B4-20.5 beneath the clarifier with TCE at 270 mg/kg and PCE at 140 mg/kg. Concentrations of TCE were greater than 1 mg/kg in most of the soil samples analyzed between 20 ft bgs and 46 ft bgs at the clarifier (Figure 10). Concentrations of PCE were much lower in the same soil samples. None of the soil collected from below sample B4-20.5 had concentrations of PCE greater than 0.66 mg/kg.

There appears to have been lateral migration of TCE, and to a lesser extent also PCE, from the area of the clarifier. The deepest soil sample from each of the three perimeter soil borings B15, B16, and B17 (each located approximately 50 feet from the clarifier) was found to have a concentration of TCE greater than 1 mg/kg (B15-44.5, B16-53.5, and B17-46). PCE, however, was not detected in the deepest samples from the perimeter

borings. An approximation of the lateral distribution of TCE in soil at 20 and 40 ft bgs are shown on Figures 11 and 12, respectively.

The depth to groundwater was found to be approximately 57 ft bgs during these investigations. No groundwater sampling was performed.

6.4 Conclusions

On the basis of the results of investigations conducted to date it appears that further actions are necessary to address the presence of VOCs in the subsurface at the Subject property.

7. REFERENCES

Erler & Kalinowski, Inc. *Phase I Environmental Site Assessment of the Jervis B. Webb Properties at 9301 Rayo Avenue and 5030 Firestone Boulevard in South Gate, California.* 20 June 1996.

U.S.G.S. *South Gate Quadrangle, 7.5 Minute Series.*, 1964, Photorevised 1981 (USGS, 1964)

Jervis B. Webb Company. *Jervis B. Webb of California Shop Site.* 25 July 1995. (Webb, 1995)

Fairchild Aerial Photo Collection, Department of Geology, Whittier College. *Historical Aerial Photographs.* 1928, 1932, 1947, 1953, 1957

Continental Aerial Photo, Inc. *Historical Aerial Photographs.* 1954, 1960, 1970, 1976, 1986, 1992.

Sanborn Mapping and Geographic Information Service. *Fire Insurance Maps.* 1950, 1966

Fred C. Hart Associates. *Environmental Compliance Assessment.* 30 December 1988. (Hart, 1988)

Bechtel Environmental, Inc. *Preliminary Assessment / Site Inspection.* 1 September 1994. (Bechtel, 1994)

Vision Environmental, Inc. *Air Quality Compliance Audit* and *Emissions Inventory.* June 1995. (Vision, 1995)

Jervis B. Webb Company. *Uniform Hazardous Waste Manifests.* 12 March 1996. (Manifests, 1996)

California Department of Water Resources. *Bulletin No. 104: Planned Utilization of the Groundwater Basins of the Coastal Plain of Los Angeles County, Appendix A, Groundwater Geology.* June 1961. (DWR, 1961)

Water Replenishment District of Southern California. *Annual Survey and Report on Groundwater Replenishment.* 1997. (WRD, 1997)

Jervis B. Webb Company. *South Gate Plant Layout.* 12 January 1967. (Webb, 1967)

Jervis B. Webb Company. *Notice of Intent to Comply with General Permit to Discharge Stormwater.* 27 July 1995. (Notice of Intent)

EMCON. *Progress Report - First Quarter 1995 for the Dial Corporation Facility at 9300 Rayo Avenue, South Gate, California.* 18 July 1995. (EMCON, 1995)

TABLE 1

Soil Gas Analytical Results for VOCs

Phase II Soil Investigation Report

5030 Firestone Boulevard, South Gate, California

Sample Name	Concentration		
	PCE (ug/L)	TCE (ug/L)	1,1,1-TCA (ug/L)
SG-1-5	23	9.6	0.5
SG-2-5	4.7	3.9	0.5
SG-3-5	1.6	3.9	0.15
SG-4-5	5.2	8.9	0.13
SG-5-5	1.6	1.5	0.044
SG-5-5 (duplicate)	1.7	1.6	0.043
SG-6-5	0.061	<0.01	0.013
SG-7-5	0.075	<0.01	<0.01
SG-8A-5	1.1	2.3	0.46
SG-8B-5	4.1	4.4	0.65
SG-8C-5	5.8	4.5	0.59
SG-9-5	25	11	0.71
SG-10-5	28	13	0.26
SG-11-5	0.94	0.47	0.036
SG-12-5	<0.01	<0.01	<0.01
SG-13-5	5	7.9	0.18
SG-14-5	28	8	0.5
SG-15-5	5.9	4.7	0.2
SG-16-5	1	0.96	0.046
SG-17-5	4.2	2.2	0.2
SG-18-5	0.13	0.074	0.017
SG-19-5	0.12	<0.01	<0.01
SG-20-5	0.74	0.14	0.082
SG-21-5	3.7	2.5	0.34
SG-22-5	25	11	0.89
SG-23-5	1.3	1.2	0.13
SG-24-5	0.57	0.33	0.080
SG-24-5 (duplicate)	0.68	0.34	0.08
SG-25-5	<0.01	<0.01	0.12
SG-25-5 (duplicate)	<0.01	<0.01	0.13
SG-26-5	<0.01	<0.01	0.12
SG-27-5	<0.01	<0.01	0.048
SG-28-5	<0.01	<0.01	<0.01
SG-29-2	0.036	0.020	0.020
SG-30-3	0.028	0.13	<0.01
SG-31-3	0.021	<0.01	<0.01
SG-32-5	<0.01	<0.01	<0.01
SG-33-5	3.2	0.41	0.18
SG-34-5	6.3	2.4	0.26
SG-35-5	1.9	3.6	0.12
SG-36-5	3.0	25	0.24
SG-37-5	2.0	12	0.18

TABLE 1

Soil Gas Analytical Results for VOCs

Phase II Soil Investigation Report

5030 Firestone Boulevard, South Gate, California

Notes:

1. Abbreviations:
   VOCs = volatile organic compounds
   PCE = tetrachloroethene
   TCE = trichloroethene
   1,1,1-TCA = 1,1,1-trichloroethane
   ug/L = micrograms per liter
2. Analyses performed by Interphase, Inc. in an on-site mobile laboratory.
3. Samples collected on 1 and 2 December 1997.
4. Sample depth indicated in sample name. Depth indicated by last number separated by a hyphen in each sample description (i.e. sample SG-5-5 collected at 5 feet below ground surface). Soil gas collected at 5 feet below ground surface except at locations SG-29, SG-30 and SG-31.
5. Additional compunds detected were as follows:
   Chloroform: SG-1-5 = 0.055 ug/L; SG=9=5 = 0.056 ug/L; SG-10-5 = 0.053 ug/L; SG-14-5 = 0.038 ug/L; SG-22-5 = 0.040 ug/L; SG-36-5 = 0.058 ug/L
   Trichlorofluoromethane (F-11): SG-22-5 = 0.010 ug/L; SG-33-5 = 0.032 ug/L
   Dichlorodifluoromethane (F-12): SG-33-5 = 1.2 ug/L
6. Analyses performed in accordance with Los Angeles Regional Water Quality Control Board guidelines for active soil gas sampling.

TABLE 2

Soil Analytical Results for pH

Phase II Soil Investigation Report

5030 Firestone Boulevard, South Gate, California

Sample Number	Depth (ft. bgs)	pH
B1-5.5	5.5	7.9
B4-6	6	8.3
B5-1	1	7.7
B5-6	6	8.0
B6-6	6	6.3
B7-2	2	7.6
B7-6	6	6.7
B8-2	2	8.6
B8-6	6	8.8

Notes:

1. Analyses performed by Orange Coast Analytical, Inc.using EPA Method 9045

TABLE 3

Soil Analytical Results for TEPH

EKI 961025.02

5030 Firestone Boulevard, South Gate, California

Sample Number	Depth (ft. bgs)	TEPH (mg/kg)
B1-5.5	5.5	<0.5
B2-5.5	5.5	<0.5
B3-6	6	<0.5
B4-10.5	10.5	<0.5
B5-1	1	<0.5
B7-2	6	<0.5
B8-2	6	<0.5
B9-5.5	5.5	<0.5
B10-6	6	<0.5
B11-6	6	<0.5

Notes:

1. Abbreviations: TEPH = Total Extractable Petroleum Hydrocarbons
   mg/kg = milligrams per kilogram
2. Analyses performed by Orange Coast Analytical, Inc.using EPM method 8015 modified

TABLE 4

Soil Analytical Results for Metals

Phase II Soil Investigation Report

5030 Firestone Boulevard, South Gate, California

Sample Number	Depth	Concentration																	
		Antimony	Arsenic	Barium	Beryllium	Cadimium	Chromium IV	Chromium Tota	Cobalt	Copper	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
	(ft. bgs)	(mg/kg)																	
B1-5.5	5.5	<5.0	<1.0	64	<0.1	<0.1	0.5	15	4.5	9	<1.0	<0.01	<0.5	5.2	<1.0	0.1	<5.0	16	28
B1-11	11	<5.0	<1.0	83	<0.1	<0.1	0.5	42	5.6	33	<1.0	0.01	<0.5	8.1	1.0	<0.1	<5.0	24	54
B4-6	6	<5.0	<1.0	67	<0.1	<0.1	<0.5	20	5.2	15	<1.0	0.01	<0.5	6.3	<1.0	0.1	<5.0	20	35
B4-10.5	10.5	<5.0	<1.0	57	<0.1	<0.1	0.88	14	3.7	11	<1.0	<0.01	<0.5	5.3	<1.0	0.1	<5.0	16	29
B4-16	16	<5.0	<1.0	94	<0.1	<0.1	<0.5	30	8.3	13	<1.0	<0.01	<0.5	14	<1.0	<0.1	<5.0	25	50
B5-1	1	<5.0	1.0	57	<0.1	<0.1	<0.5	12	3.9	5.1	<1.0	<0.01	<0.5	5.4	<1.0	<0.1	5.0	15	29
B5-6	6	<5.0	1.0	56	<0.1	<0.1	<0.5	13	4	12	<1.0	<0.01	<0.5	5.4	<1.0	0.1	<5.0	17	28
B6-6	6	<5.0	<1.0	77	<0.1	0.1	<0.5	74	5.2	120	<1.0	<0.01	<0.5	6.2	<1.0	0.1	<5.0	21	45
B7-2	2	<5.0	1.0	67	0.1	0.1	<0.5	16	4.2	6.2	<1.0	<0.01	<0.5	6.7	<1.0	<0.1	<5.0	19	33
B7-6	6	<5.0	1.0	60	<0.1	<0.1	<0.5	19	4	18	1.0	<0.01	<0.5	5.4	1.0	<0.1	<5.0	16	30
B8-2	2	<5.0	1.0	61	<0.1	<0.1	<0.5	21	4.3	7.3	<1.0	<0.01	<0.5	5	<1.0	<0.1	<5.0	16	29
B8-6	2	<5.0	<1.0	61	<0.1	<0.1	<0.5	16	4	8.5	<1.0	<0.01	<0.5	5.6	<1.0	<0.1	<5.0	17	28
B10-6	6	<5.0	<1.0	33	<0.1	<0.1	<0.5	7.3	2.3	3.4	<1.0	<0.01	<0.5	3	<1.0	<0.1	<5.0	8.9	16
B11-6	6	<5.0	<1.0	53	<0.1	<0.1	<0.5	13	3.6	6.4	<1.0	<0.01	<0.5	5.3	<1.0	<0.1	<5.0	16	25

Notes:

1. Abbreviations: mg/kg = milligrams per kilogram
2. Analyses performed by Orange Coast Analytical, Inc. using EPA Methods 6010 for all metals except Method 7196 was used for Chromium (IV) and Method 7471 was used for Mercury.
3. Samples from borings B1 through B13 collected on 28 October 1997.

TABLE 5

Soil Analytical Results for VOCs

Phase II Soil Investigation Report

5030 Firestone Boulevard, South Gate, California

Sample Number	Depth (ft. bgs)	Concentration PCE (mg/kg)	Concentration TCE (mg/kg)
B1-5.5	5.5	0.074	0.024
B1-11	11	0.13	0.037
B1-20	20	0.035	0.04
B2-5.5	5.5	0.018	0.0073
B2-10.5	10.5	0.045	<0.015
B3-6	6	0.042	0.01
B3-11	11	0.12	0.034
B4-6	6	0.076	0.021
B4-16	16	2.2	0.092
B4-20.5	20.5	140	270
B5-6	6	0.025	0.0053
B5-10.5	10.5	0.065	0.19
B6-6	6	0.13	0.031
B6-10.5	10.5	0.019	0.025
B7-6	6	0.055	0.019
B7-11	11	<0.015	<0.015
B8-6	6	0.0029	<0.0025
B8-11	11	0.041	0.05
B9-5.5	5.5	0.0036	<0.0025
B9-10.5	10.5	0.022	0.041
B10-6	6	0.027	0.0064
B10-11	11	<0.015	0.036
B11-6	6	0.061	0.016
B11-11	11	<0.015	0.035
B12-6	6	<0.0025	<0.0025
B13-6	6	<0.0025	<0.0025
B15-10	10	<0.005	<0.005
B15-16	16	<0.005	<0.005
B15-20.5	20.5	<0.005	<0.005
B15-26.5	26.5	0.054	0.38
B15-31	31	0.041	0.52
B15-35.5	35.5	0.026	0.14
B15-40	40	<0.005	1.2
B15-44.5	44.5	<0.005	1.3
B16-6	6	<0.005	<0.005
B16-11	11	<0.005	<0.005
B16-16	16	0.027	<0.005
B16-21	21	0.041	<0.005
B16-26	26	0.047	<0.005
B16-31	31	0.027	<0.005
B16-35.5	35.5	<0.005	<0.005
B16-41	41	<0.005	0.41
B16-46	46	<0.005	0.39

TABLE 5

Soil Analytical Results for VOCs

Phase II Soil Investigation Report

5030 Firestone Boulevard, South Gate, California

Sample Number	Depth (ft. bgs)	Concentration PCE (mg/kg)	Concentration TCE (mg/kg)
B16-51	51	<0.005	1.3
B17-6	6	<0.005	<0.005
B17-11	11	<0.005	<0.005
B17-16	16	<0.005	<0.005
B17-21	21	<0.005	<0.005
B17-26	26	<0.005	0.048
B17-31.5	31.5	<0.005	0.056
B17-36	36	<0.005	1.4
B17-41	41	<0.005	1.2
B17-46	46	<0.005	1.6
B17-53.5	53.5	<0.005	1.4
B18-11	11	0.4	0.11
B18-16	16	0.37	0.61
B18-21	21	0.66	16
B18-27	27	0.093	0.75
B18-31	31	0.14	2
B18-36	36	<0.005	0.056
B18-41	41	0.091	2.3
B18-46	46	0.18	8.7
B19-16	16	0.42	0.2
B19-21	21	0.28	1.8
B19-26	26	0.28	1.5
B19-31	31	0.25	1.2
B19-36.5	36.5	<0.005	0.11
B19-41	41	0.16	4
B19-46	46	0.18	4.3

Notes:

1. Abbreviations: VOCs = volatile organic compounds PCE = tetrachloroethene
   TCE = trichloroethene mg/kg = milligrams per kilogram
2. Analyses performed by Orange Coast Analytical, Inc. usinf EPA methods 8240 and 8010
3. Samples from borings B1 through B13 collected on 28 October 1997. Samples from borings B15 through B19 collected on 1 December and 2 December 1997.

TABLE 6

Soil Geotechnical Testing Results

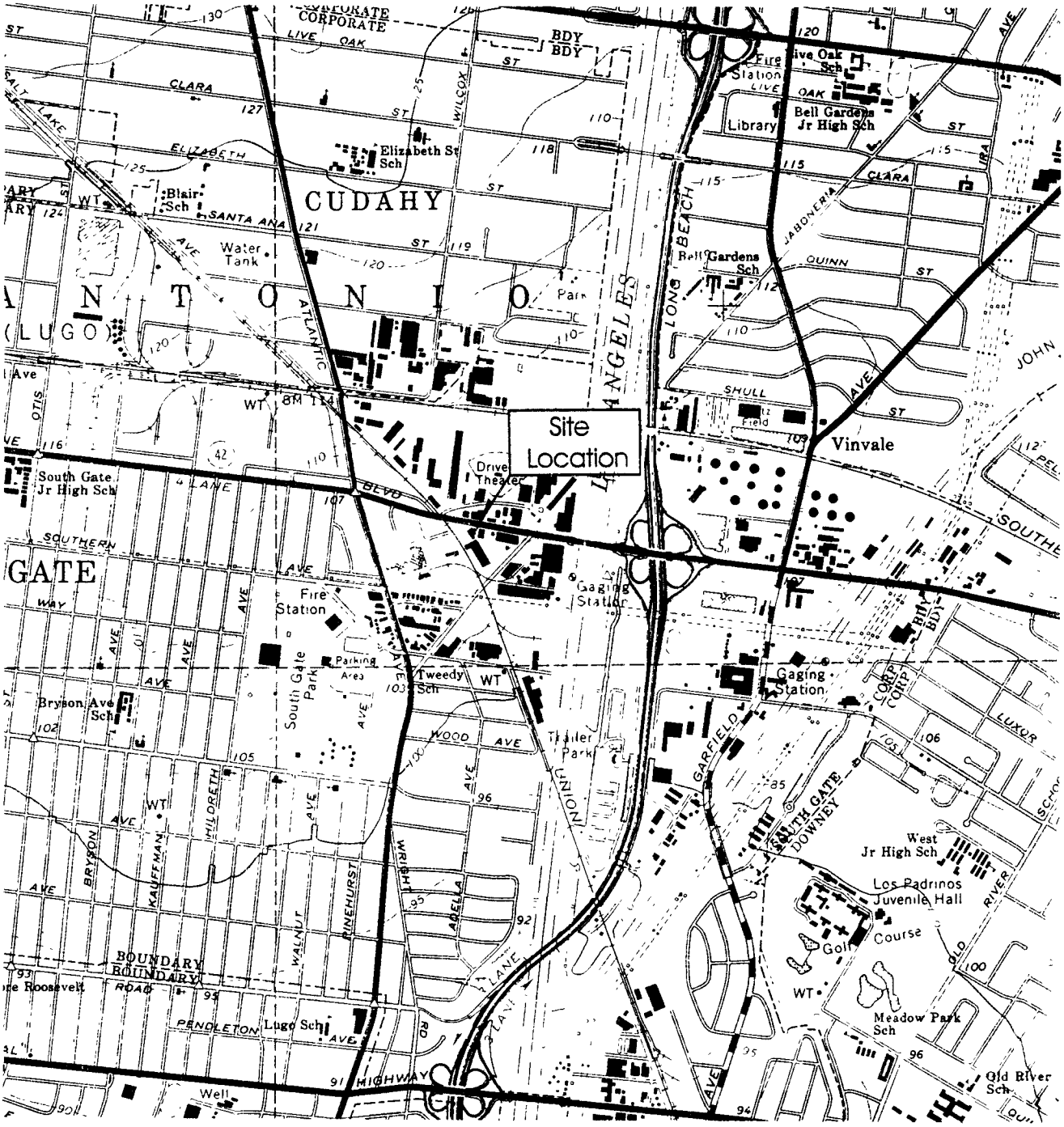
Phase II Soil Investigation Report

5030 Firestone Boulevard, South Gate, California

Sample Number	Depth (ft. bgs)	Moisture Content ASTM D2216 (%)	Dry Density ASTM D2937 (PCF)	Total Carbon Walkley-Black (%)	Effective Permeability API RP40 (millidarcy)	Air Conductivity API RP40 (cm/sec)
B15-15	15	22.3	102.1	0.88	N/A	NO FLOW
B15-31.5	31.5	35.8	82.8	0.96	N/A	NO FLOW
B-15-36	36	10.9	112.8	ND	452.7	3.0E-005
B-15-47.5	47.5	24.1	95.9	0.34	N/A	NO FLOW
B16-16.5	16.5	26.6	90.3	0.18	0.7	9.4E-008
B16-26.5	26.5	39.9	85.4	1.07	N/A	NO FLOW
B16-36	36	7.0	101.6	0.10	1246.4	8.2E-05
B16-46.5	46.5	25.3	105.8	0.61	0.4	5.2E-007
B17-16.5	16.5	23.4	108.9	0.61	N/A	NO FLOW
B17-26.5	26.5	38.1	89.3	1.11	N/A	NO FLOW
B17-36.5	36.5	26.1	99.4	0.57	0.6	9.2E-008
B17-46.5	46.5	21.5	108.0	0.58	1.1	1.4E-007

Notes:

1) Abbreviations: ND = not detectable; cm/sec = centimeters per second; PCF = pounds per cubic foot; N/A = not analyzed
2. Analyses performed by Environmental Geotechnology Laboratory, Inc.
3. Samples from borings collected from borings B15 through B19 collected on 1 December and 2 December 1997.



N

0 2,000 4,000

(Approximate Scale in Feet)

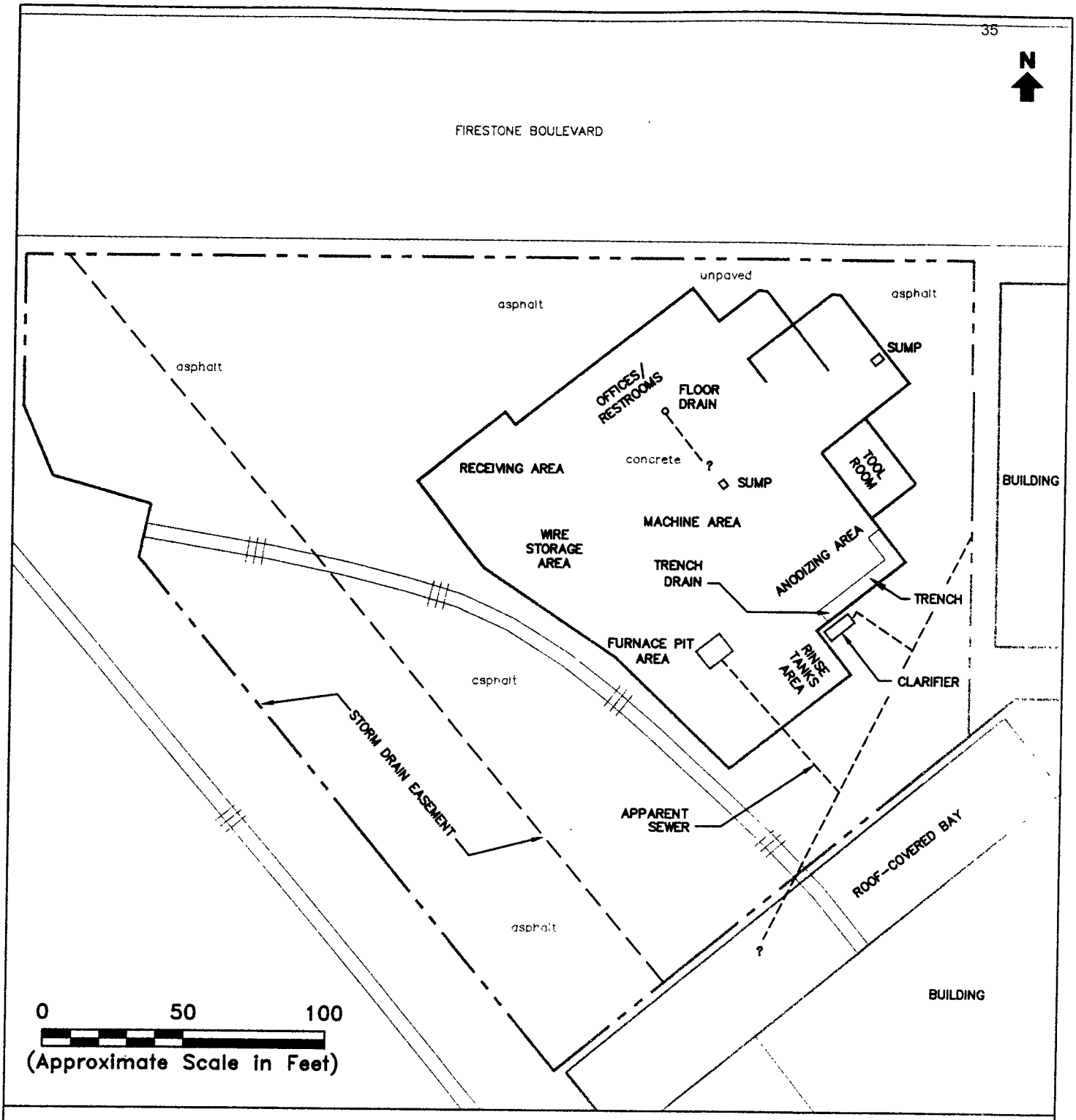
Source: U.S.G.S 7.5 Minute Series "South Gate" Quadrangle, 1964, photorevised 1981.

Erler & Kalinowski, Inc.

Site Location Map

Jervis B. Webb Company
South Gate, California
February 1998
EKI 961025.02

Figure 1



LEGEND

- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR
- SEWER (not confirmed)
- STORM DRAIN EASEMENT (not confirmed)

Notes:

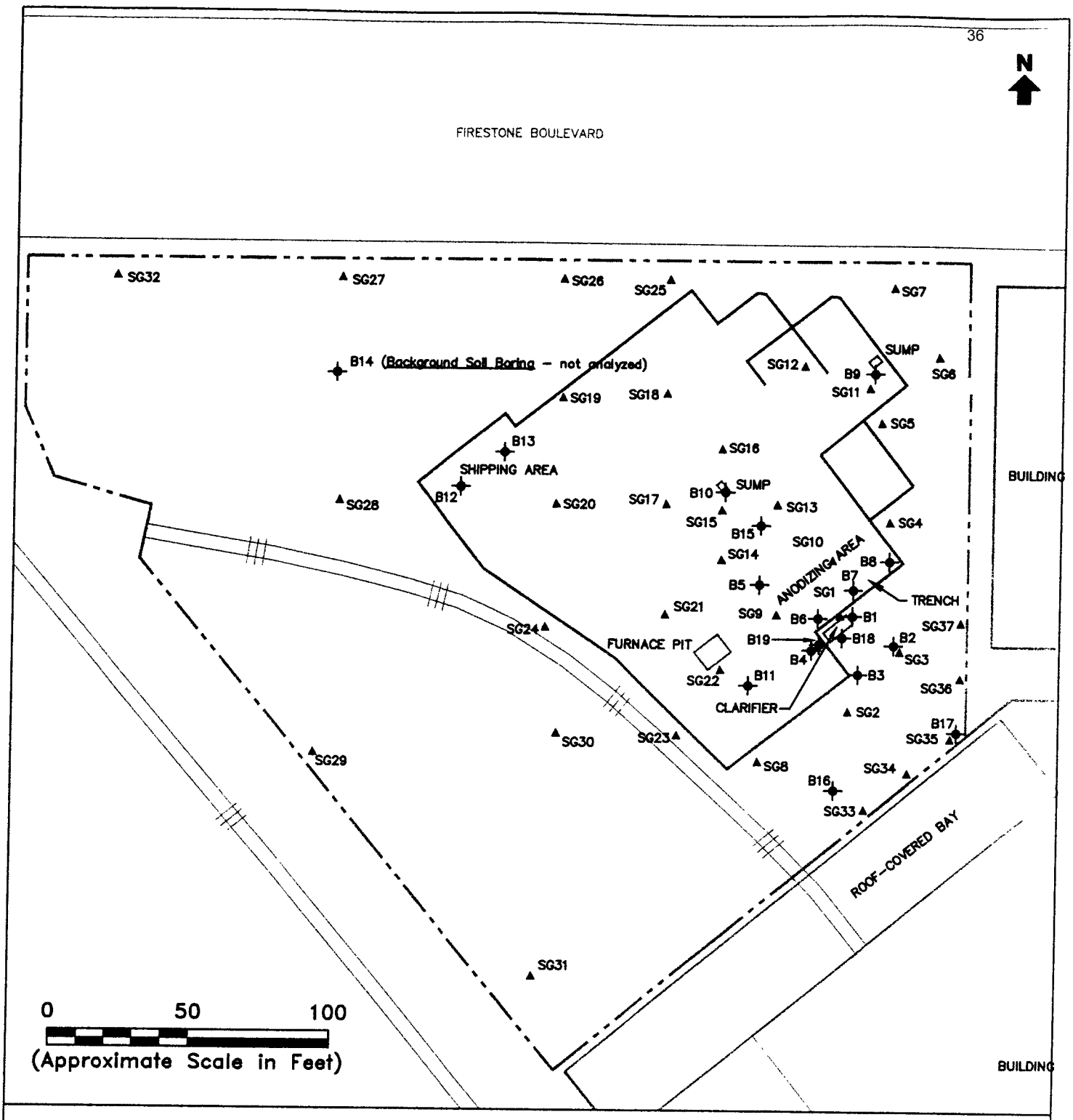
1. All locations are approximate.

Erler & Kalinowski, Inc.

Subject Property Features
5030 Firestone Boulevard

Jervis B. Webb Company
South Gate, CA
February 1998
EKI 961025.02

Figure 2



LEGEND

- SOIL GAS SAMPLING LOCATION
- SOIL GAS SAMPLING LOCATION
- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR

Notes:

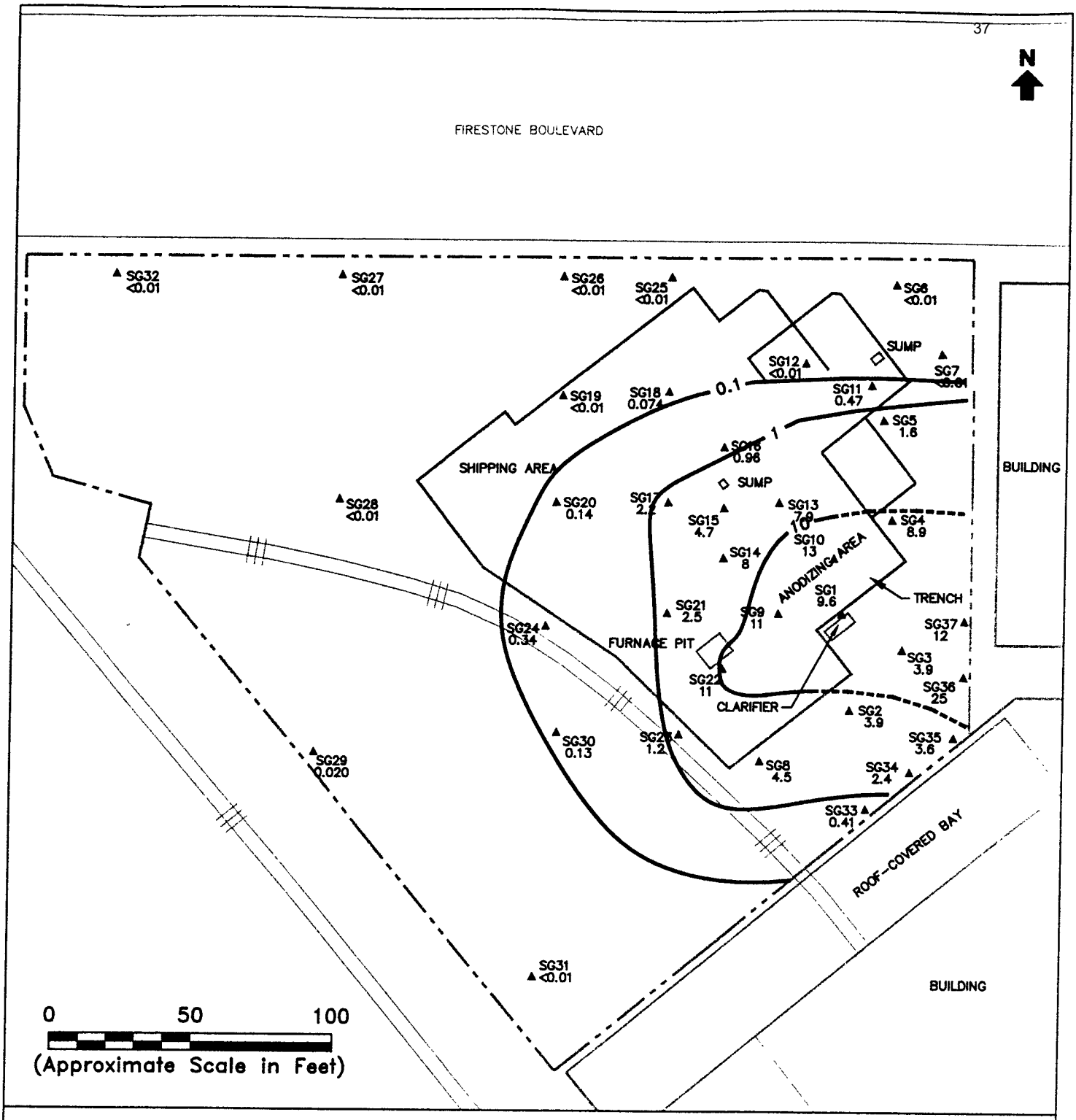
1. All locations are approximate.

Erler & Kalinowski, Inc.

Locations of Soil and Soil Gas Sampling

Jervis B. Webb Company
South Gate, CA
February 1998
EKI 961025.02

Figure 3



LEGEND

- ▲ SOIL GAS SAMPLING LOCATION
- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR

Notes:

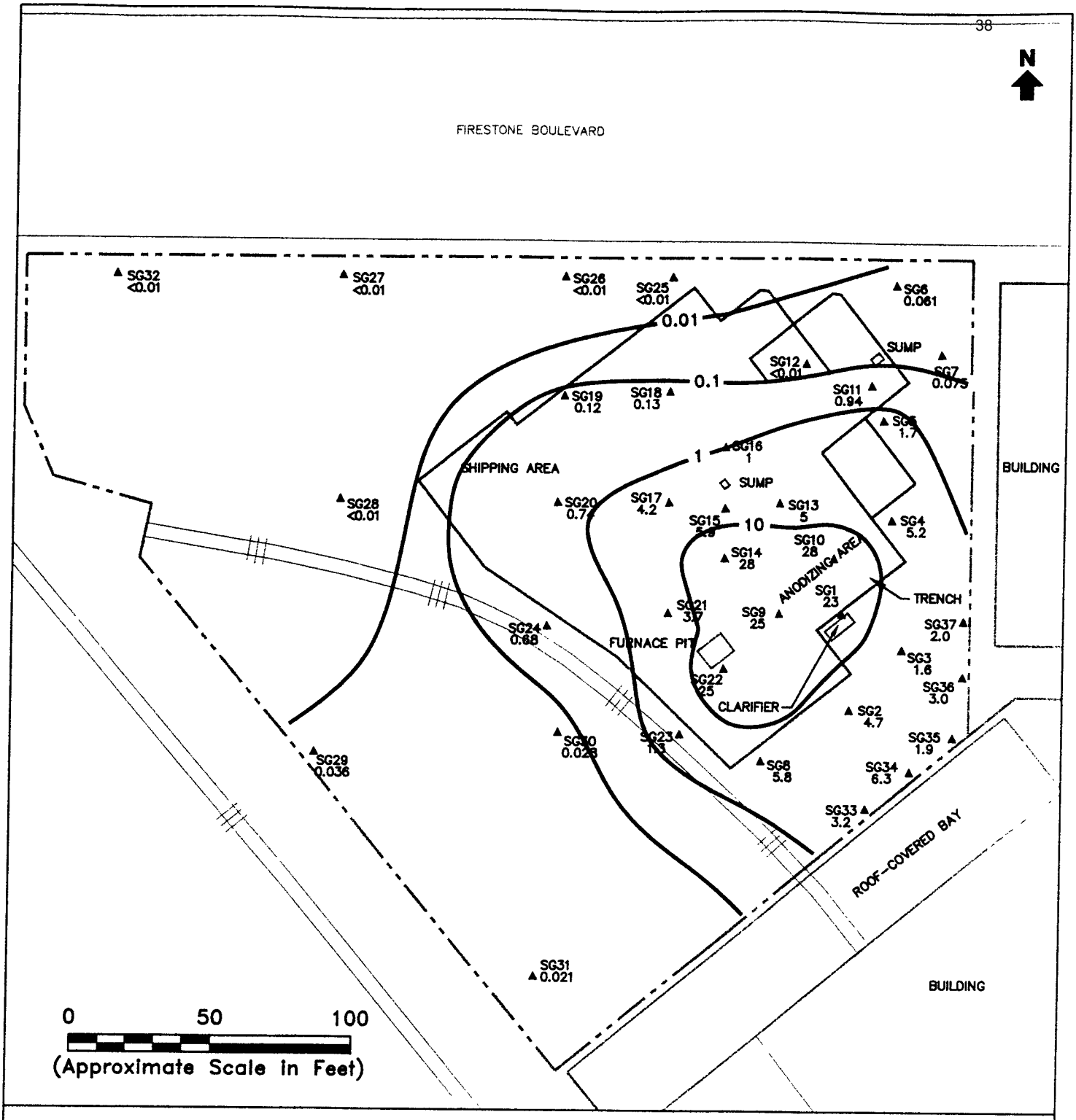
1. All locations are approximate.
2. Soil gas concentration contours in units of micrograms per liter by volume in air.

Erler & Kalinowski, Inc.

Concentrations of TCE Detected in Shallow Soil Gas

Jervis B. Webb Company
South Gate, CA
February 1998
EKI 961025.02

Figure 4



LEGEND

- ▲ SOIL GAS SAMPLING LOCATION
- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR

Notes:

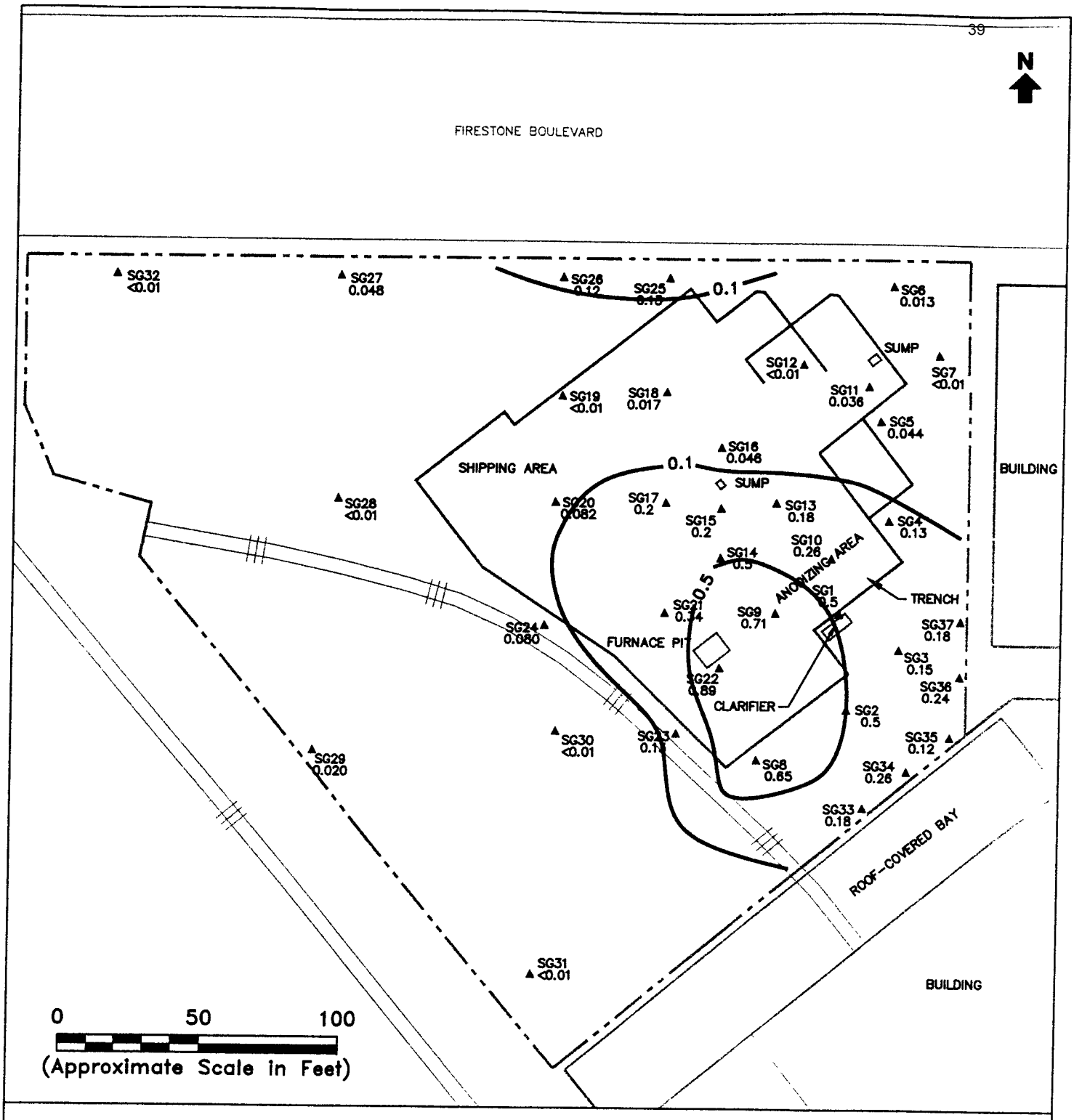
1. All locations are approximate.
2. Soil gas concentration contours in units of micrograms per liter by volume in air.

Erler & Kalinowski, Inc.

Concentrations of PCE Detected in Shallow Soil Gas

Jervis B. Webb Company
South Gate, CA
February 1998
EKI 961025.02

Figure 5



LEGEND

- ▲ SOIL GAS SAMPLING LOCATION
- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR

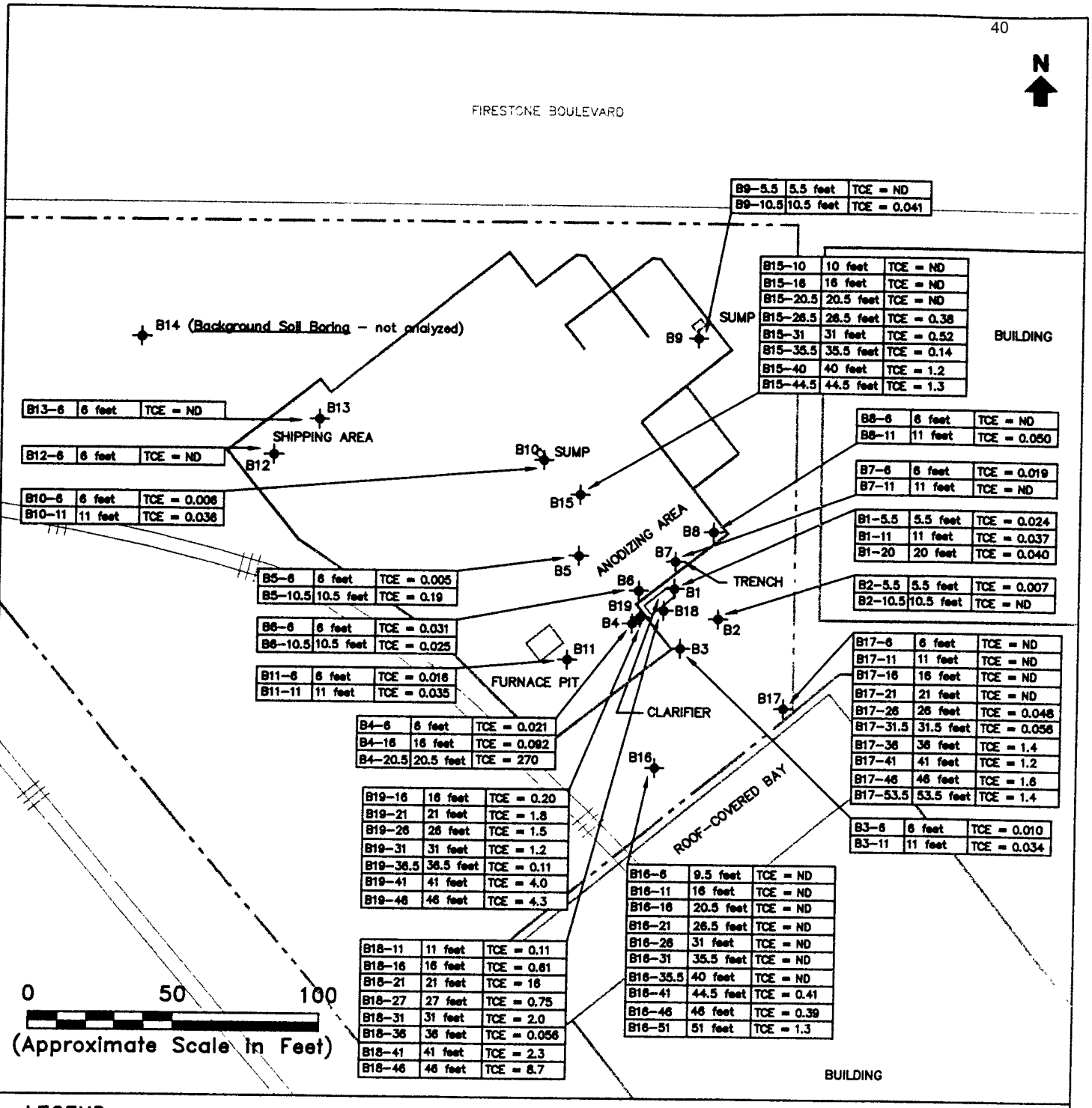
Erler & Kalinowski, Inc.

Concentrations of 1,1,1-TCA Detected in Shallow Soil Gas

Jervis B. Webb Company
South Gate, CA
February 1998
EKI 961025.02
Figure 6

Notes:

1. All locations are approximate.
2. Soil gas concentration contours in units of micrograms per liter by volume in air.



B9–5.5	5.5 feet	TCE = ND
B9–10.5	10.5 feet	TCE = 0.041

B15–10	10 feet	TCE = ND
B15–16	16 feet	TCE = ND
B15–20.5	20.5 feet	TCE = ND
B15–26.5	26.5 feet	TCE = 0.38
B15–31	31 feet	TCE = 0.52
B15–35.5	35.5 feet	TCE = 0.14
B15–40	40 feet	TCE = 1.2
B15–44.5	44.5 feet	TCE = 1.3

B13–6	6 feet	TCE = ND

B12–6	6 feet	TCE = ND

B10–6	6 feet	TCE = 0.006
B10–11	11 feet	TCE = 0.036

B8–6	6 feet	TCE = ND
B8–11	11 feet	TCE = 0.050

B7–6	6 feet	TCE = 0.019
B7–11	11 feet	TCE = ND

B1–5.5	5.5 feet	TCE = 0.024
B1–11	11 feet	TCE = 0.037
B1–20	20 feet	TCE = 0.040

B5–6	6 feet	TCE = 0.005
B5–10.5	10.5 feet	TCE = 0.19

B2–5.5	5.5 feet	TCE = 0.007
B2–10.5	10.5 feet	TCE = ND

B6–6	6 feet	TCE = 0.031
B6–10.5	10.5 feet	TCE = 0.025

B11–6	6 feet	TCE = 0.016
B11–11	11 feet	TCE = 0.035

B17–6	6 feet	TCE = ND
B17–11	11 feet	TCE = ND
B17–16	16 feet	TCE = ND
B17–21	21 feet	TCE = ND
B17–26	26 feet	TCE = 0.048
B17–31.5	31.5 feet	TCE = 0.056
B17–36	36 feet	TCE = 1.4
B17–41	41 feet	TCE = 1.2
B17–46	46 feet	TCE = 1.6
B17–53.5	53.5 feet	TCE = 1.4

B4–6	6 feet	TCE = 0.021
B4–16	16 feet	TCE = 0.092
B4–20.5	20.5 feet	TCE = 270

B19–16	16 feet	TCE = 0.20
B19–21	21 feet	TCE = 1.8
B19–26	26 feet	TCE = 1.5
B19–31	31 feet	TCE = 1.2
B19–36.5	36.5 feet	TCE = 0.11
B19–41	41 feet	TCE = 4.0
B19–46	46 feet	TCE = 4.3

B3–6	6 feet	TCE = 0.010
B3–11	11 feet	TCE = 0.034

B16–6	9.5 feet	TCE = ND
B16–11	16 feet	TCE = ND
B16–16	20.5 feet	TCE = ND
B16–21	26.5 feet	TCE = ND
B16–26	31 feet	TCE = ND
B16–31	35.5 feet	TCE = ND
B16–35.5	40 feet	TCE = ND
B16–41	44.5 feet	TCE = 0.41
B16–46	46 feet	TCE = 0.39
B16–51	51 feet	TCE = 1.3

B18–11	11 feet	TCE = 0.11
B18–16	16 feet	TCE = 0.61
B18–21	21 feet	TCE = 16
B18–27	27 feet	TCE = 0.75
B18–31	31 feet	TCE = 2.0
B18–36	36 feet	TCE = 0.056
B18–41	41 feet	TCE = 2.3
B18–46	46 feet	TCE = 8.7

LEGEND

- LOCATION OF SOIL BORING
- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR

Notes:

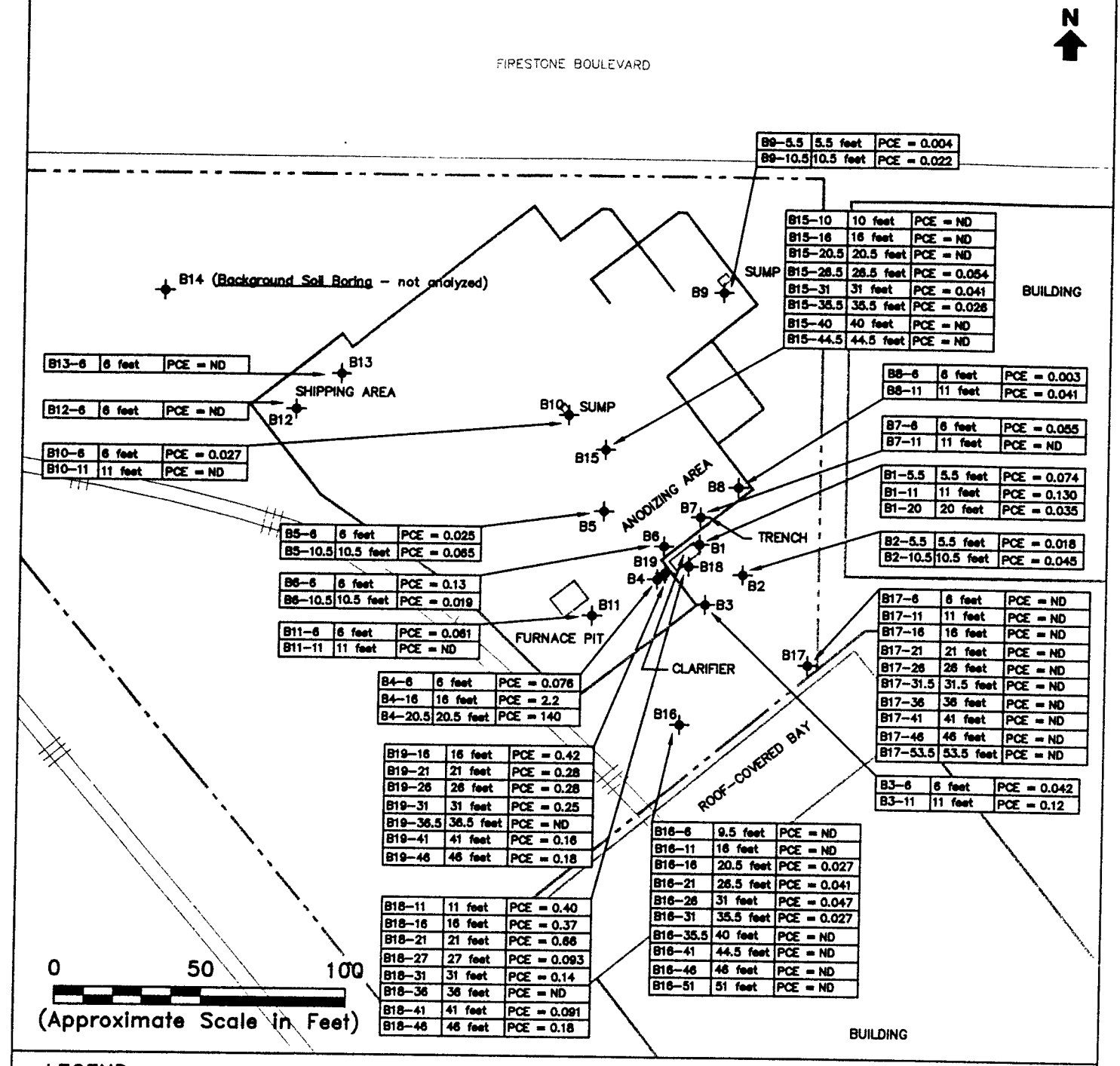
1. All locations are approximate.
2. Soil boring B4 installed at approximately 15 degrees angle from vertical in the direction of the base of the clarifier. Boring terminated beneath the clarifier.
3. See laboratory report for results of additional analyses.
4. Concentrations of volatile organic compounds ("VOCs") reported in units of micrograms per kilogram. Concentrations shown in units of milligrams per kilogram ("mg/kg"). "ND" indicates non-detection above method detection limits. Some concentrations rounded to nearest 0.001 mg/kg.

Erler & Kalinowski, Inc.

Concentrations of TCE Detected in Soil

Jervis B. Webb Company
South Gate, CA
February 1998
EKI 961025.02

Figure 7



LEGEND

- LOCATION OF SOIL BORING
- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR

Notes:

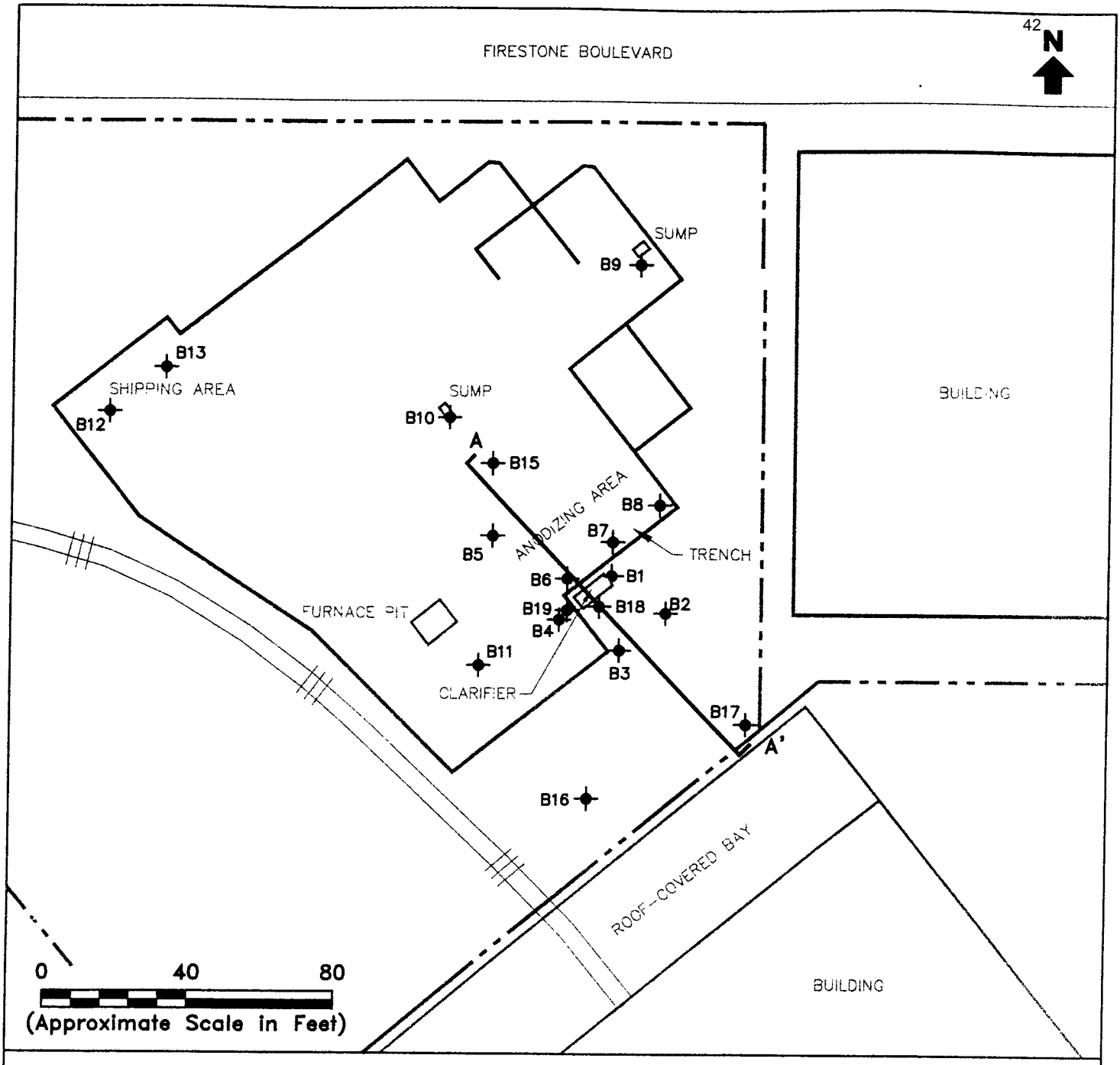
1. All locations are approximate.
2. Soil boring B4 installed at approximately 15 degrees angle from vertical in the direction of the base of the clarifier. Boring terminated beneath the clarifier.
3. See laboratory report for results of additional analyses.
4. Concentrations of volatile organic compounds ("VOCs") reported in units of micrograms per kilogram. Concentrations shown in units of milligrams per kilogram ("mg/kg"). "ND" indicates non-detection above method detection limits. Some concentrations rounded to nearest 0.001 mg/kg.

Erler & Kalinowski, Inc.

Concentrations of PCE Detected in Soil

Jervis B. Webb Company
South Gate, CA
February 1998
EKI 961025.02

Figure 8



LEGEND

- LOCATION OF SOIL BORING
- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR

Notes:

1. All locations are approximate.

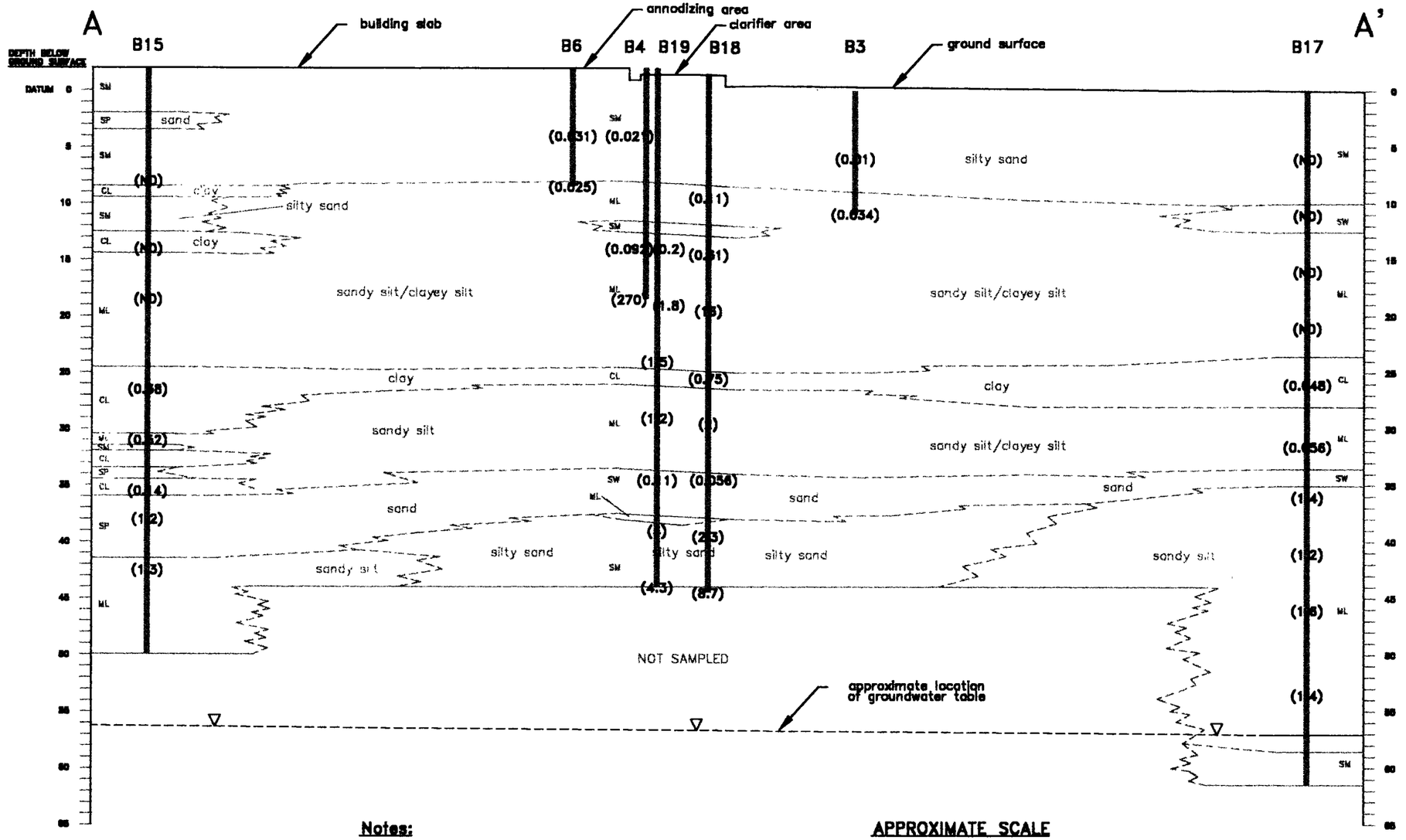
Erler & Kalinowski, Inc.

Plan Map Showing Deep Soil Cross Section Through Clarifier Area

Jervis B. Webb Co.
South Gate, CA

February 1998
EKI 961025.02

Figure 9



LEGEND

(8.7)	Concentration of TCE Detected in Sample of Soil (depth of sample indicated)
———	Lithologic Contact
- - - - -	Inferred Lithologic Contact
---▽---	Approximate Location of Static Groundwater Table
silty sand	General Soil Type
ML	USCS Soil Classification (see Appendix B)

Notes:

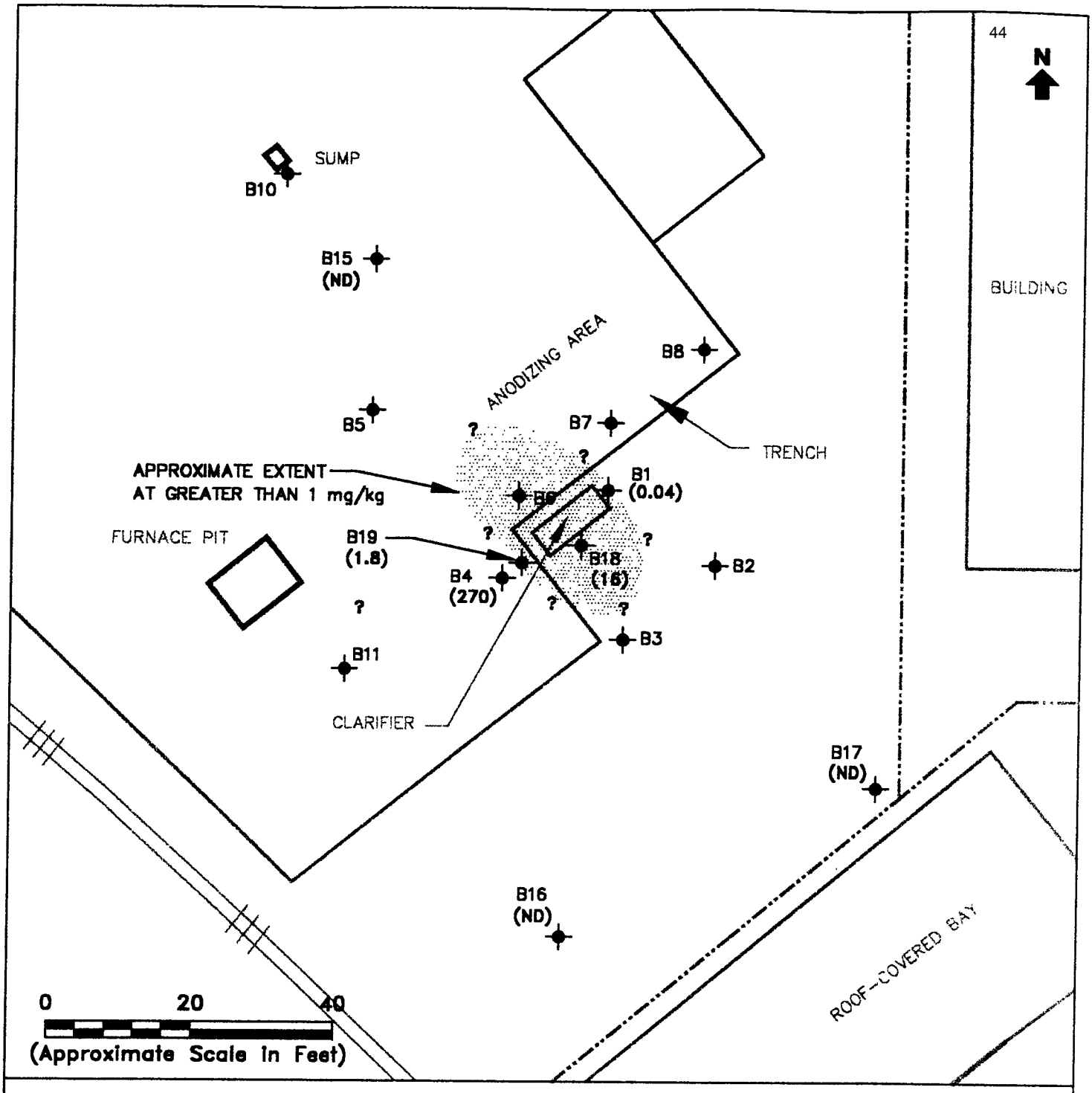
1. All locations are approximate.
2. All concentrations shown in units of milligrams per kilogram.
3. See Appendix B of the report for boring logs. See Table 2 for analytical results for soil samples.

APPROXIMATE SCALE

1 inch = 10 feet

Erler & Kalinowski, Inc.

Cross Section A – A' Showing Concentration of TCE in Vadose Zone Soil
Jervis B. Webb Co.
South Gate, CA
February 1998
EKI 961025.02
Figure 10



LEGEND

- LOCATION OF SOIL BORING (Not all borings sampled to 20 feet)
- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR

Notes:

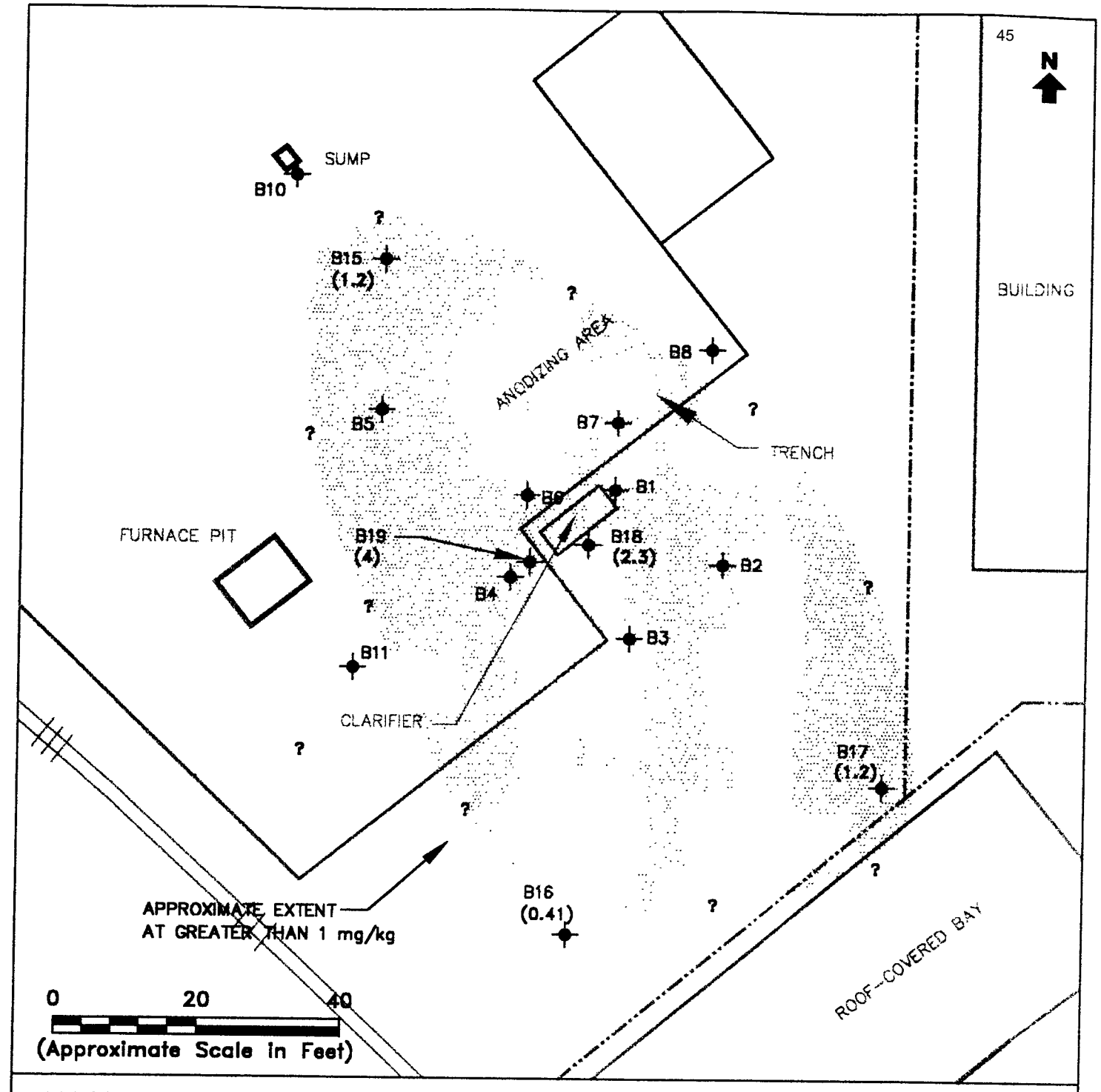
1. All locations are approximate.
2. Soil boring B4 installed at approximately 15 degrees angle from vertical in the direction of the base of the clarifier. The detected 270 mg/kg was in a sample from below the clarifier at 20 feet below ground surface.
3. See laboratory report for results of additional analyses.
4. Concentrations of volatile organic compounds ("VOCs") shown in units of milligrams per kilogram ("mg/kg"). "ND" indicates non-detection above method detection limits. Some concentrations rounded to nearest 0.001 mg/kg.

Erler & Kalinowski, Inc.

Approximate Lateral Extent of TCE Detected in Soil at Approximately 20 Feet Below Ground Surface

Jervis B. Webb Company
South Gate, CA
February 1998
EKI 961025.02

Figure 11



LEGEND

- LOCATION OF SOIL BORING (Not all borings sampled to 20 feet)
- PROPERTY LINE/BOUNDARY
- BUILDING
- RAILROAD SPUR

Notes:

1. All locations are approximate.
2. Soil boring B4 installed at approximately 15 degrees angle from vertical in the direction of the base of the clarifier.
3. See laboratory report for results of additional analyses.
4. Concentrations of volatile organic compounds ("VOCs") shown in units of milligrams per kilogram ("mg/kg"). "ND" indicates non-detection above method detection limits. Some concentrations rounded to nearest 0.001 mg/kg.

Erler & Kalinowski, Inc.

Approximate Lateral Extent of TCE Detected in Soil at Approximately 40 Feet Below Ground Surface

Jervis B. Webb Company
South Gate, CA
February 1998
EKI 961025.02

Figure 12

Appendix A

Site Background Information

SUMMARY OF SITE BACKGROUND INFORMATION

This attachment provides a summary of site background information from EKI's review of documents provided by Webb, historical aerial photographs, and regulatory agency files for 5030 Firestone Boulevard in South Gate ("Subject Property").

A.1 Description of Current Site Conditions

The Subject Property is not currently occupied except that the current owner/operator of the business at 9301 Rayo Avenue property uses portions of the Subject Property for storage of containerized raw materials and equipment. The locations of key site features are shown on Figure 2.

A.1.1 Exterior Areas

The areas along the northern and eastern sides of the Subject Property are covered with asphalt except for a vegetated area at the north end of the building. The area along the west side of the building is asphalt covered and an out-of-service railroad spur passes near the building. A fence bounds the property on the west, north, and east sides. The area south of the building is asphalt and concrete covered with open access to the Rayo Property. Unpaved areas are present beyond the southern boundary of the property. During EKI's initial site inspection, the areas outside of the building were generally clear of debris. Some minor refuse and automobile tires are present on the Subject Property. No significant waste materials have been observed during EKI's subsequent visits to the Subject Property.

Just outside an inset corner on the southeast side of the building, under an overhanging roof, is a three stage clarifier approximately 4-feet wide by 8-feet long in area (see Figure 2). Based on a detail shown on the Plumbing Plan, the clarifier is approximately 4-feet deep. The structure is set in a concrete pad that rises approximately six inches above the surrounding asphalt area. A sample collection box at the northeasterly end of the clarifier was observed to be filled with concrete. The main chambers of the structure were observed to be filled with sand and covered with steel plates. No plumbing for the clarifier was visible at the surface on the outside of the building. Following Blake, this area was later used by Webb for temporary storage of drums of hazardous materials before the drums were transported off-site for disposal. No drums or other materials were present at this location during the walk-through.

During recent investigation activities at the Property, a subcontractor, Cornerstone Environmental Contractors, Inc. of Walnut Creek, California was retained by Webb to remove a portion of the overhanging roof above the clarifier. This activity was required in order to access the clarifier area with a drill rig.

A.1.2 Inside Areas

No raw materials, equipment or waste have been observed by EKI inside the manufacturing building. Refuse, wood scraps and other materials associated with the aging building structure are present in small quantities. Following is a description of features of the building and associated former process and storage areas reportedly used by Blake during their activities at the Property.

As shown on the Plumbing Plan for Blake Rivets' waste discharge permit (City of South Gate Industrial Wastewater Discharge Permit No. 5181), the "anodizing area" is located on the southeast side of the building. An L-shaped floor drainage trench is present along the northeasterly and southeasterly walls bounding the anodizing area (see Figure 2). The trench is approximately 2-inches to 6-inches deep and slopes toward a drain at the southwest end of the trench. The trench drain leads underground to the clarifier on the exterior of the adjacent wall. The trench was observed by EKI to partially be filled with sandy gravel fill. The trench is in a location described on the Plumbing Plan as the "trench for all overflow water" and is indicated to have been 48-inches wide and 6-inches deep. Concrete in the area of the trench was observed to be severely etched. Concrete at other locations in the anodizing area was observed to be broken and/or cracked. EKI observed a 2-inch outer diameter pipe in the anodizing area next to the discharge point to the clarifier. This pipe extends from the southeasterly trench wall toward the ceiling and appears to have been a vent pipe for the clarifier.

Also in the southeast corner of the building, is an area indicated in the waste discharge permit to have had "rinse tanks." Numerous patches were observed by EKI in this area. The Plumbing Plan indicates that former structures in this area may have been associated with the former "trench for all overflow water." During the Phase II investigation, EKI observed that the roof in this area of the building had been constructed with wood braces for supporting a secondary wall that apparently extended down from the roof. This former feature may have been used to section-off the rinse tanks area from the other portions of the building.

Just west of the rinse tanks area is an area noted on Plumbing Plan as having a "concrete pit for furnace and quench tank." A floor drain is indicated to have been in the floor of the pit and the Plumbing Plan shows that it may have discharged to the sanitary sewer, located to the south of the building. No pit was observed in this location during the site walk-through; however, a large rectangular concrete patch was observed in the floor in the area. In the western portion of the building, EKI observed a 2-inch outer diameter pipe extending from the concrete floor toward the ceiling. Based on the location of the pipe, situated in the vicinity of a sewer line shown on the Plumbing Plan, it is apparent that the pipe may be a vent pipe for the sanitary sewer.

The Plumbing Plan identifies the middle portion of the building as the "machine area." Extending from the large bay entrance of the building to the northwest are two rows of machine anchor bolts in the concrete floor. It appears that these anchor bolts were associated with former machining equipment. Some small oil stained concrete areas were

observed by EKI. Electrical conduit for the former machinery was observed to be present in the concrete floor at numerous locations within the building.

In the central portion of the building, EKI observed a recessed portion of the concrete ("sump"). This structure is approximately 2 feet wide by 4 feet long and 6-inches deep. EKI inspected the inside of the structure and did not observe any pipes or other conveyance into or out of the structure. Because the structure was very shallow, it is not likely that the structure was used for liquid storage or conveyance.

The west side of the building is described on the Plumbing Plan as having been used as a wire storage and receiving area. Several concrete patches were observed in the northwestern corner of the building, which is indicated on the Plumbing Plan to have been a former "receiving area." This area was apparently used by Blake for receiving raw materials. Directly south of the receiving area is a general area that was formerly used for "wire storage."

The east side of the building is identified on the Plumbing Plan as having been used for storage and shipping. On the east corner of the building, EKI observed a concrete sump covered by a steel plate. This structure is approximately 2 feet wide by 4 feet long and was observed by EKI to be filled with sand. Concrete patches of approximately the same dimensions were also observed in the vicinity of the covered sump. Based on our inspection of the concrete patches in the area, it is possible that additional below ground structures were previously present at these locations. EKI did not establish the depth of the existing below ground structure or attempt to verify the presence any conveyance piping. This sump is not described on the Plumbing Plan.

The northeast area of the building formerly had plaster and wood interior build-outs that were used for offices, restrooms and a lunch room. These walls no longer exist. Some vinyl floor tile, ceramic floor tile, plumbing and a floor drain were observed by EKI in this area. The Plumbing Plan identifies one small room as a "lab." It is apparent that the floor drain was associated with the restrooms.

A.2 Historical Uses of the Subject Property

EKI has reviewed several documents provided by Webb and additional materials gathered by EKI to obtain historical use information for the Subject Property and surrounding area. Sources used to establish historical use of the Subject Property included historical aerial photographs obtained at Continental Aerial Photo, Inc. in Los Alamitos, California ("Continental") and Fairchild Aerial Photo Collection, Department of Geology, at Whittier College ("Fairchild"). EKI also reviewed historical maps from the Sanborn Mapping and Geographic Information Service ("Sanborn"). A brief discussion of historical use of the Subject Property, beginning with the earliest record reviewed, follows.

In 1928, the Subject Property was vacant. Several dirt roads appeared on the Subject Property and adjacent Rayo Property by 1932; however, there was no development of the

Subject Property through 1947 (Fairchild, 1928, 1932, 1947). By 1950, substantial industrial development was evident at properties adjacent to and in the vicinity of the Subject Property. However, no development of the Subject Property had occurred as of 1950 (Sanborn, 1950). In 1953, the Subject Property was developed with two small buildings, which consisted of separate portions of the current building configuration. The Rayo Property was still undeveloped in 1953 (Fairchild, 1953). In 1954, the Rayo Property was developed with a large manufacturing building (Continental, 1954). By 1957, the two separate buildings on the Subject Property had been joined by a large addition, consisting of the main manufacturing portion of the current structure (Fairchild, 1957). Additional expansion of buildings on the Subject Property and the Rayo Property had occurred by 1960 (Continental, 1960). The railroad spur located on the western side of the building on the Subject Property was present by 1966 (Sanborn, 1966). Few changes to the configuration of the Subject Property occurred from 1960 through 1992 (Continental, 1970, 1976, 1986, 1992).

A.3 Findings of Previous Site Assessments

According to Webb, Blake and Webb have been the only occupants of the Subject Property since development of the land between 1950 and 1953. It is our understanding that no sampling and analysis of soil or groundwater has been completed at the Subject Property prior to the recent investigations of the Subject Property.

EKI reviewed several documents provided by Webb relevant to environmental conditions at the Subject Property. Because Webb's activities at the Rayo Property included use of the Subject Property for miscellaneous materials and hazardous waste storage, a brief summary of information concerning Webb's operations and chemical used at the Rayo Property is also provided herein.

Hart Report. In 1988, Fred C. Hart Associates completed an environmental compliance assessment of Webb's current operations at 9301 Rayo Avenue and 5030 Firestone Boulevard. While Hart's assessment included the Subject Property, it appears that the Property was not used during Webb's operations for purposes other than storage of raw materials and drums of hazardous waste. The Hart Report did not identify any chemical use at the Subject Property.

On the Rayo Property, the report indicates that Webb operations included: "...metal fabrication (shearing, bending, sawing, machining, welding), painting operations and some assembly." (Hart, 1988, page 2)

Raw materials used included: "...I-beam stock, channel stock, plate and sheet metal, tubing, angle iron, paints and solvents." (Hart, 1988, page 2)

Solvent use was described as: "Solvents (J209 and Solvent Blend) are used as thinner/solvent for maintaining viscosity and for cleaning equipment. These solvents both are a mixture of alcohols, esters, ketones, toluene, xylene, glycol ethers and petroleum distillates in varying concentrations." (Hart, 1988, page 2)

Wastes generated included: "...waste paint, used solvent, waste oil and coolants, scrap metal and general trash." (Hart, 1988, page 2)

Several hazardous materials were used in the cleaning and painting activities, these included: "...solvents, oils and paints. Solvent, specifically 1,1,1-trichloroethane (1,1,1-TCA), was used for cleaning steel parts and products. The waste generated from the cleaning activities was containerized in 55- gallon drums and sent to an off-site treatment, storage, and disposal facility." (Hart, 1988, page 2)

Bechtel Report. Bechtel completed a Preliminary Assessment/Site Inspection of the Subject Property and Rayo Property on behalf of the U.S. EPA Region IX pursuant to the listing of the sites on the Comprehensive Environmental Response, Compensation, and Liability Information System ("CERCLIS") list. The site inspection was completed on 24 May 1994. Bechtel's description of the Subject Property and hazardous substances generated by Webb is summarized as follows.

The Bechtel Report indicated that the equipment storage building on the Subject Property had: "...a hazardous substance storage area attachment on its southeast corner." (Bechtel 1994, page 2)

Related to Webb's operations on the Rayo Property, the report indicated that: "Hazardous substances used in the manufacturing process include solvents, paints, and petroleum-based lubricants. Prior to the mid-1980s, 1,1,1-trichloroethane was used as a solvent to clean fabricated metal pieces. The 1,1,1-trichloroethane was replaced in the mid-1980s with naphtha petroleum, a petroleum-based solvent..." (Bechtel 1994, page 2)

The Bechtel Report summarizes the sources of potential contamination from Webb operations as follows: "A former 8,000-gallon paint and water sump used during the wet-painting process. The sump was converted to hold paint filters for a dry-painting booth in the mid-1980s. Hazardous waste manifests from 1990 through 1993 indicate that fifty 55-gallon drums containing waste paint, used filters, and paint rags were transported off site for disposal..." (Bechtel 1994, page 6)

The 8,000 gallon paint and water sump and a second sump were investigated and closed in accordance with the Los Angeles County Department of Public Works, Environmental Programs Division requirements for underground storage tank closure. A closure approval letter was issued by the County on 17 December 1996. No significant releases were found in this area.

Vision Reports. The Vision reports do not provide chemical use or waste information specifically related to the Subject Property. Before discontinuing operations at the Rayo Property, Webb held South Coast Air Quality Management District Permit No. M58084 for a spray paint booth located on the Rayo Property. Chemical use information for products used at the Rayo Property during 1994 is presented in the appendices of the *Emissions Inventory* report (Vision, 1995). The products were:

- Danger Orange coating (product code 3-WE-2613) manufactured by P.F.I., Inc. Approximately one gallon was used in 1994.

- W/B Acrylic Enamel Safety Yellow coating (product code 728Y047) manufactured by Ellis Paint company. Approximately one gallon was used in 1994.

- W/B Acrylic Enamel Gray coating (product code 728A065) manufactured by Ellis Paint company. Approximately six gallons were used in 1994.

- W/B Acrylic Enamel Blue (Unibilt) coating (product code 728L044) manufactured by Ellis Paint company. Approximately five gallons were used in 1994.

- Cool-Tool II cutting and taping fluid manufactured by Monroe Fluid Technology and Premium AW Hydraulic Oil #32 supplied by Golden West Lubricants, Inc. The combined usage of cutting and hydraulic oils during 1994 is reported to be approximately 30 gallons.

- Rustlick WS-11 manufactured by ITW Fluid Products Group. The approximate quantity used is not reported.

- Kill-Cide 700 manufactured by ITW Fluid Products Group. The approximate quantity used is not reported.

- Solvent 105 supplied by Safety Kleen. Approximately 40 gallons were delivered to the site is 1994.

Uniform Hazardous Waste Manifests. The manifests, along with supporting documentation, indicate the disposition of various hazardous wastes removed from the site(s) by Industrial Waste Utilization, Inc. during March 1996 after Webb closed its operations. Industrial Waste Utilization, Inc.'s job order form indicates that the following wastes were removed and disposed off-site. Most, if not all, of these wastes originated from the Rayo Property.

3 - 55 gallon drums of paint filters
1 - Lot of miscellaneous and 1 gallon containers
1 - 5 gallon pail of sealant
4 - 5 gallon pails of grease
1 - 15 gallon drum of aerosols
2 - 55 gallon drums of water/water based paint
1 - 55 gallon drum of consolidated solvents
2 - 55 gallon drums of rags
1 - 55 gallon drum of paint
several miscellaneous empty drums and containers.

The quantities disposed in March 1996 may not be typical of prior normal operations at the Rayo Property because Webb was in the process of closing down its operations.

According to a regulatory agency database search by Vista Information Solutions, Inc. dated 3 April 1996 ("Vista"), Webb was listed as a large quantity generator of non-acutely hazardous waste with the U.S. EPA's Resource Conservation and Recovery Act Program. This listing is associated with Webb's former operations at the Rayo Property. Webb had EPA Handler I.D. No. CAD008339467.

A.4 Regulatory Agency Information

According to the Vista report, Blake Rivet was listed as a small quantity generator of non-acutely hazardous waste with the U.S. EPA's Resource Conservation and Recovery Act Program. This listing is associated with Blake's former operations at the Subject Property. Blake had Handler I.D. No. CAD063798995.

The Vista report indicates that the Webb site is listed on the CERCLIS database and is under review by the U.S. EPA. Based on the Bechtel report (Bechtel, 1994) it appears that the CERCLIS listing pertains to both the Rayo Property and the Subject Property. The report indicates that further assessment is needed but that the site is considered a lower priority.

EKI contacted the City of South Gate to inquire about the existence of a permit for industrial wastewater discharge for the Subject Property. The City of South Gate file for Industrial Wastewater Discharge Permit No. 5181 indicates that Blake Rivet maintained the permit in connection with its production of aluminum and stainless steel aircraft rivets at the Subject Property. Its wastewater producing operations were sulfuric acid anodizing, tumbling, and deburring. The raw materials used included sulfuric acid, alkaline caustic, and chromic. Approximately 4,000 gallons of wastewater was discharged to the sewer from Blake operations each day. According to a process diagram submitted with the permit application, the anodizing operation included tanks containing the following; sulfuric acid anodize, dichromate seal, DX-34, CH-90 ETCH, and rinse waters. More detailed information describing these solutions was not provided. A spin dryer, vibrator and tumblers were also used in the anodizing area.

A Plumbing Plan submitted with the permit application shows that the wastewater from the anodizing area discharged to a below-ground concrete clarifier located outside the southeast corner of the building. The clarifier consists of three compartments and a sampling box at the point of discharge to the sanitary sewer. According to the Plumbing Plan, the clarifier was approximately 5 feet by 8 feet in area and 3 to 4 feet deep. The Plumbing Plan also indicates that rinse tanks outside the anodizing area may have drained to the clarifier.

A Notice of Violation was issued to Blake on 18 May 1979 by the Sanitation Districts of Los Angeles County for heavy metals discharge. Total chromium was detected at a concentration of 34.3 mg/l in the discharge wastewater from the clarifier. The results of a

subsequent wastewater sample analysis were reported in a Sanitation Districts of Los Angeles County Lab Report No. I-2782 dated 25 July 1979. The following analytical results were reported for the sample collected on 25 July 1979:

COD	105.9 mg/l
Suspended Solids	834.0 mg/l
pH	9.7
total chromium	16.5 mg/l
iron	41.8 mg/l
nickel	0.3 mg/l
oil & grease	7.0 mg/l

In a 27 October 1981 letter from the Sanitation Districts of Los Angeles County, Permit No. 5181 was voided because Blake Rivet was no longer in business. A City of South Gate inspector visited the site on 24 August 1992 and reported that all equipment and floor drains had been removed and that the clarifier had been filled with sand and concrete.

The Plumbing Plan also shows a concrete pit for a furnace and quench tank in an area that appears to be separate from the anodizing operations. The pit had a floor drain that may have discharged to the sanitary sewer. This discharge appears to have been to a separate sanitary sewer line than that of the clarifier. The sewer lines for the quench tank and clarifier apparently connect with a sanitary sewer which crosses through the Subject Property (see Figure 2).

Appendix B

Boring Logs

Boring & Well Construction Log

Erler & Kalinowski, Inc.

BORING LOCATION: Jervis B. Webb Company

CONTRACTOR: Vironex, Inc.

DRILLING METHOD: Geoprobe Soil Probe

CONDUCTOR CASING: Type: From: 0.00' To: 0.00' Dia: 0.00in

BLANK CASING: Type: From: 0.0' To: 0.00' Dia: 0.00in

SCREENS: Type: From: To: Size: Dia:

ANNULAR FILL:
Type: Bentonite Grout From: 0.00' To: 21.00'
Type: From: To:
Type: From: To:

Boring/Well Name: B-01
Project Name: Webb
Project Number:

GS ELEVATION: 0.00'
BOREHOLE DIA: 2.00in
TOTAL DEPTH: 21.00'
DATUM: Mean Sea Level
DATE STARTED: 10/28/97
DATE COMPLETED: 10/28/97
LOGGED BY: Rob Hesse
CERTIFIED BY: Beth Lamb, CEG
REMARKS:

SAMPLES: TIME COLLECTED	SAMPLES: TYPE / INTERVAL	SAMPLES: SAMPLE NUMBER	SAMPLES: RECOVERY	SAMPLES: BLOW COUNT	VAPOR READING (OVM)	DEPTH (feet)	MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						0	Asphalt			
						4	SILTY SAND, very dark grayish brown (2.5Y 3/2), (10,30,60,0), fine grained, micaceous, loose, moist.	SM		
		B1-5.5				6	color change to grayish brown (2.5Y 4/2).			
						9	SAND, light olive brown (2.5Y 5/3), (0,20,80,0), fine to medium grained, very loose, dry.	SP		
		B1-11				11	SANDY SILT with CLAY, very dark grayish brown (2.5Y 3/2), (20,50,30,0), fine grained sand, slightly plastic, low toughness, soft to firm, moist.	SM		

Boring & Well Construction Log

Boring/Well Name: B-01
Project Name: Webb
Project Number:

Erler & Kalinowski, Inc.

TIME COLLECTED	TYPE \ INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)		MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						13				
						14	CLAYEY SILT, dark grayish brown (2.5Y 4/2), (30,60,10,0), moderate plasticity, low toughness, firm, moist.	ML		
		B1-15.5				15				
						16	color change to very dark grayish brown (2.5Y 3/2).			
						17				
						18				
						19	SILT, dark gray (2.5Y 4/1), (10,80,10,0), micaceous, non plastic, soft, moist.			
		B1-20				20				
						21	Total Depth = 21 feet.			
						22				
						23				
						24				
						25				
						26				
						27				
						28				

Boring & Well Construction Log

Erler & Kalinowski, Inc.

BORING LOCATION: Jervis B. Webb Company

CONTRACTOR: Vironex, Inc.

DRILLING METHOD: Geoprobe Soil Probe

CONDUCTOR CASING: Type: — From: 0.00' To: 0.00' Dia: 0.00in

BLANK CASING: Type: — From: 0.0' To: 0.00' Dia: 0.00in

SCREENS: Type: — From: To: Size: Dia:

ANNULAR FILL:
Type: Bentonite Grout From: 0.00' To: 11.00'
Type: From: To:
Type: From: To:

Boring/Well Name: B-02
Project Name: Webb
Project Number:

GS ELEVATION: 0.00'
BOREHOLE DIA: 2.00in
TOTAL DEPTH: 11.00'
DATUM: Mean Sea Level
DATE STARTED: 10/28/97
DATE COMPLETED: 10/28/97
LOGGED BY: Rob Hesse
CERTIFIED BY: Beth Lamb, CEG
REMARKS:

SAMPLES: TIME COLLECTED	TYPE / INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)	DEPTH (feet)	MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						0	Asphalt			
						1				
						2				
						3				
						4	SILTY SAND, dark grayish brown (2.5Y 4/2), (10,30,60,0), fine grained, micaceous, medium dense, moist.	SM		
		B2-5.5				5				
						6				
						7				
						8				
						9				
		B2-10.5				10				
						11	Total Depth = 11 feet.			

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Boring & Well Construction Log

Erler & Kalinowski, Inc.

BORING LOCATION: Jervis B. Webb Company

CONTRACTOR: Vironex, Inc.

DRILLING METHOD: Geoprobe Soil Probe

CONDUCTOR CASING: Type: — From: 0.00' To: 0.00' Dia: 0.00in

BLANK CASING: Type: — From: 0.0' To: 0.00' Dia: 0.00in

SCREENS: Type: — From: To: Size: Dia:

ANNULAR FILL:
Type: Bentonite Grout From: 0.00' To: 11.00'
Type: From: To:
Type: From: To:

Boring/Well Name: B-03
Project Name: Webb
Project Number:

GS ELEVATION: 0.00'
BOREHOLE DIA: 2.00in
TOTAL DEPTH: 11.00'
DATUM: Mean Sea Level
DATE STARTED: 10/28/97
DATE COMPLETED: 10/28/97
LOGGED BY: Rob Hesse
CERTIFIED BY: Beth Lamb, CEG
REMARKS:

SAMPLES: TIME COLLECTED	SAMPLES: TYPE / INTERVAL	SAMPLES: SAMPLE NUMBER	SAMPLES: RECOVERY	SAMPLES: BLOW COUNT	VAPOR READING (OVM)	DEPTH (feet)	MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						0	Asphalt			
						1				
						2				
						3				
						4	SILTY SAND, dark grayish brown (2.5YR 4/2), (10,30,60,0), fine grained, micaceous, medium dense, moist.	SM		
		B3-6				5				
						6				
						7				
						8				
						9	SAND, pale yellow (2.5Y 7/3), (0,20,80,0), fine grained, poorly graded, very loose, dry.	SP		
						10				
		B3-11				11	SANDY SILT with CLAY, very dark grayish brown (2.5Y 3/2), (20,50,30,0), fine grained sand, slightly plastic, low toughness, soft to firm, moist.	SM		
							Total Depth = 11 feet			

Boring & Well Construction Log

Erler & Kalinowski, Inc.

BORING LOCATION: Jervis B. Webb Company

CONTRACTOR: Vironex, Inc.

DRILLING METHOD: Geoprobe Soil Probe

CONDUCTOR CASING: Type: — From: 0.00' To: 0.00' Dia: 0.00in

BLANK CASING: Type: — From: 0.0' To: 0.00' Dia: 0.00in

SCREENS: Type: — From: To: Size: Dia:

ANNULAR FILL:
Type: Bentonite Grout From: 0.00' To: 21.00'
Type: From: To:
Type: From: To:

Boring/Well Name: B-04
Project Name: Webb
Project Number:

GS ELEVATION: 0.00'
BOREHOLE DIA: 2.00in
TOTAL DEPTH: 21.00'
DATUM:
DATE STARTED: 10/28/97
DATE COMPLETED: 10/28/97
LOGGED BY: Rob Hesse
CERTIFIED BY: Beth Lamb,CEG
REMARKS:

SAMPLES: TIME COLLECTED	TYPE / INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)	DEPTH (feet)	MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						1	Concrete, 10-12 inches. SANDY SILT (Fill).	ML		
						2	Concrete, 10-12 inches. SANDY SILT (Fill).			
						3	SANDY SILT, light olive brown (2.5Y 5/3) mottled with dark gray (2.5Y 4/1), (20,50,30,0), fine grained, micaceous, slightly plastic, firm, moist.	ML		
						4		SM		
						5				
		B4-6				6	SANDY SILT, very dark greysh brown (2.5Y 3/2), (10,30,60,0), fine to medium grained sand, micaceous, non plastic, firm, moist.			
						7				
						8				
						9	SAND, light olive brown (2.5Y 5/3), (0,20,80,0), fine to medium grained, poorly graded, medium dense, moist.	SP		
		B4-10.5				10				
						11				

Boring & Well Construction Log

Boring/Well Name: B-04
Project Name: Webb
Project Number:

Erler & Kalinowski, Inc.

TIME COLLECTED	TYPE \ INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)		MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						13				
						14	CLAYEY SILT, dark grayish brown (2.5Y 4/2), (30,60,10,0), moderate plasticity, low toughness, soft to	ML		
						15	firm, moist.			
		B4-16				16				
						17				
						18				
						19	color change to dark gray (2.5Y 4/1).			
		B4-20.5				20				
						21				
						22	Total Depth = 21 feet.			
						23				
						24				
						25				
						26				
						27				
						28				

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Boring & Well Construction Log

Erler & Kalinowski, Inc.

BORING LOCATION: Jervis B. Webb Company

CONTRACTOR: Vironex, Inc.

DRILLING METHOD: Geoprobe Soil Probe

CONDUCTOR CASING: Type: From: 0.00' To: 0.00' Dia: 0.00in

BLANK CASING: Type: From: 0.0' To: 0.00' Dia: 0.00in

SCREENS: Type: From: To: Size: Dia:

ANNULAR FILL:
Type: Bentonite Grout From: 0.00' To: 11.00'
Type: From: To:
Type: From: To:

Boring/Well Name: B-05
Project Name: Webb
Project Number:

GS ELEVATION: 0.00'
BOREHOLE DIA: 2.00in
TOTAL DEPTH: 11.00'
DATUM:
DATE STARTED: 10/28/97
DATE COMPLETED: 10/28/97
LOGGED BY: Rob Hesse
CERTIFIED BY: Beth Lamb,CEG
REMARKS:

SAMPLES: TIME COLLECTED	TYPE / INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)	DEPTH (feet)	MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
		B5-1				1	Concrete, approximately 6 inches.	SM		
						2	SILTY SAND, dark olive brown (2.5Y 5/3), (10,30,60,0), fine grained sand, micaceous, loose, moist.			
		B5-6				3				
						4				
						5				
						6				
						7				
						8				
						9				
		B5-10.5				10				
						11	Total Depth = 11 feet.			

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Boring & Well Construction Log

Erler & Kalinowski, Inc.

BORING LOCATION: Jervis B.Webb Company

CONTRACTOR: Vironex, Inc.

DRILLING METHOD: Geoprobe Soil Probe

CONDUCTOR CASING: Type: — From: 0.00' To: 0.00' Dia: 0.00in

BLANK CASING: Type: — From: 0.0' To: 0.00' Dia: 0.00in

SCREENS: Type: — From: To: Size: Dia:

ANNULAR FILL:
Type: Bentonite From: 0.00' To: 11.00'
Type: From: To:
Type: From: To:

Boring/Well Name: B-06
Project Name: Webb
Project Number:

GS ELEVATION: 0.00' **TOTAL DEPTH:** 11.00'
BOREHOLE DIA: 2.00in **DATUM:**
DATE STARTED: 10/28/97 **DATE COMPLETED:** 10/28/97
LOGGED BY: Rob Hesse
CERTIFIED BY: Beth Lamb,CEG
REMARKS:

SAMPLES: TIME COLLECTED	SAMPLES: TYPE / INTERVAL	SAMPLES: SAMPLE NUMBER	SAMPLES: RECOVERY	SAMPLES: BLOW COUNT	VAPOR READING (OVM)	DEPTH (feet)	MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
		B6-6				1–11	Concrete, 10–12 inches. SILTY SAND, dark grayish brown (2.5Y 4/2), (10,30,60,0), fine grained sand, micaceous, medium dense, moist. Total Depth = 11 feet.	SM		
		B6-10.5								

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Boring & Well Construction Log

Erler & Kalinowski, Inc.

BORING LOCATION: Jervis B. Webb Company

CONTRACTOR: Vironex, Inc.

DRILLING METHOD: Geoprobe Soil Probe

CONDUCTOR CASING: Type: From: 0.00' To: 0.00' Dia: 0.00in

BLANK CASING: Type: From: 0.0' To: 0.00' Dia: 0.00in

SCREENS: Type: From: To: Size: Dia:

ANNULAR FILL:
Type: Bentonite Grout From: 0.00' To: 11.00'
Type: From: To:
Type: From: To:

Boring/Well Name: B-07
Project Name: Webb
Project Number:

GS ELEVATION: 0.00'
BOREHOLE DIA: 2.00in
TOTAL DEPTH: 11.00'
DATUM:
DATE STARTED: 10/28/97
DATE COMPLETED: 10/28/97
LOGGED BY: Rob Hesse
CERTIFIED BY: Beth Lamb,CEG
REMARKS:

SAMPLES: TIME COLLECTED	SAMPLES: TYPE / INTERVAL	SAMPLES: SAMPLE NUMBER	SAMPLES: RECOVERY	SAMPLES: BLOW COUNT	VAPOR READING (OVM)	DEPTH (feet)	MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						0	Concrete, 10-12 inches.			
		B7-2				1	SILTY SAND, grayish brown (2.5Y 5/2), (10,30,60,0), fine grained sand, micaceous, medium dense, moist.	SM		
						2				
						3	color change to dark grayish brown (2.5Y 5/2).			
						4				
		B7-6				5				
						6				
						7				
						8				
						9				
		B7-11				10				
						11	Total Depth = 11 feet.			

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Boring & Well Construction Log

Erler & Kalinowski, Inc.

BORING LOCATION: Jervis B. Webb Company

CONTRACTOR: Vironex, Inc.

DRILLING METHOD: Geoprobe Soil Probe

CONDUCTOR CASING: Type: — From: 0.00' To: 0.00' Dia: 0.00in

BLANK CASING: Type: — From: 0.0' To: 0.00' Dia: 0.00in

SCREENS: Type: — From: To: Size: Dia:

ANNULAR FILL:
Type: Bentonite Grout From: 0.00' To: 11.00'
Type: From: To:
Type: From: To:

Boring/Well Name: B-08
Project Name: Webb
Project Number:

GS ELEVATION: 0.00'
BOREHOLE DIA: 2.00in
TOTAL DEPTH: 11.00'
DATUM:
DATE STARTED: 10/28/97
DATE COMPLETED: 10/28/97
LOGGED BY: Rob Hesse
CERTIFIED BY: Beth Lamb,CEG
REMARKS:

SAMPLES: TIME COLLECTED	TYPE / INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)	DEPTH (feet)	MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						1	Concrete, 10–12 inches.			
		B8-2				2	SILTY SAND, grayish brown (2.5Y 5/2), (10,30,60,0), fine grained sand, micaceous, loose, moist.	SM		
						3				
						4	color change to dark grayish brown (2.5Y 4/2).			
		B8-6				5				
						6				
						7				
						8				
						9				
						10				
		B8-11				11	Total Depth = 11 feet.			

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Boring & Well Construction Log

Erler & Kalinowski, Inc.

BORING LOCATION: Jervis B. Webb Company

CONTRACTOR: Vironex, Inc.

DRILLING METHOD: Geoprobe Soil Probe

CONDUCTOR CASING: Type: — From: 0.00' To: 0.00' Dia: 0.00in

BLANK CASING: Type: — From: 0.0' To: 0.00' Dia: 0.00in

SCREENS: Type: — From: To: Size: Dia:

ANNULAR FILL:
Type: Bentonite Grout From: 0.00' To: 11.00'
Type: From: To:
Type: From: To:

Boring/Well Name: B-09
Project Name: Webb
Project Number:

GS ELEVATION: 0.00'
TOTAL DEPTH: 11.00'
BOREHOLE DIA: 2.00in
DATUM:
DATE STARTED: 10/28/97
DATE COMPLETED: 10/28/97
LOGGED BY: Rob Hesse
CERTIFIED BY: Beth Lamb,CEG
REMARKS:

SAMPLES: TIME COLLECTED	SAMPLES: TYPE / INTERVAL	SAMPLES: SAMPLE NUMBER	SAMPLES: RECOVERY	SAMPLES: BLOW COUNT	VAPOR READING (OVM)	DEPTH (feet)	MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						0	Concrete, 10-12 inches.			
						1				
						2				
						3				
						4		SM		
		B9-5.5				5	SILTY SAND, dark grayish brown (2.5Y 4/2), (5,30,75,0), fine grained sand, micaceous, loose, moist.			
						6				
						7				
						8				
						9		ML		
		B9-10.5				10	SANDY SILT, dark gray (2.5Y 4/1), (10,50,40,0), fine grained sand, micaceous, non plastic, soft to firm, moist.			
						11	Total Depth = 11 feet.			

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Boring & Well Construction Log

Erler & Kalinowski, Inc.

BORING LOCATION: Jervis B. Webb Company

CONTRACTOR: Vironex, Inc.

DRILLING METHOD: Geoprobe Soil Probe

CONDUCTOR CASING: Type: — From: 0.00' To: 0.00' Dia: 0.00in

BLANK CASING: Type: — From: 0.0' To: 0.00' Dia: 0.00in

SCREENS: Type: — From: To: Size: Dia:

ANNULAR FILL:
Type: Bentonite Grout From: 0.00' To: 11.00'
Type: From: To:
Type: From: To:

Boring/Well Name: B-10
Project Name: Webb
Project Number:

GS ELEVATION: 0.00'
BOREHOLE DIA: 2.00in
TOTAL DEPTH: 11.00'
DATUM:
DATE STARTED: 10/28/97
DATE COMPLETED: 10/28/97
LOGGED BY: Rob Hesse
CERTIFIED BY: Beth Lamb,CEG
REMARKS:

SAMPLES: TIME COLLECTED	TYPE / INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)	DEPTH (feet)	MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						1	Concrete, 10-12 inches.			
						2				
						3				
						4	SILTY SAND, dark grayish brown (2.5Y 4/2), (10,30,60,0), fine grained sand, micaceous, loose, moist.	SM		
		B10-6				5				
						6				
						7				
						8	color change to very dark grayish brown (2.5Y 3/2).			
						9				
						10				
		B10-11				11	Total Depth = 11 feet.			

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Boring & Well Construction Log

Erler & Kalinowski, Inc.

BORING LOCATION: Jervis B. Webb Company

CONTRACTOR: Vironex, Inc.

DRILLING METHOD: Geoprobe Soil Probe

CONDUCTOR CASING: Type: — From: 0.00' To: 0.00' Dia: 0.00in

BLANK CASING: Type: — From: 0.0' To: 0.00' Dia: 0.00in

SCREENS: Type: — From: To: Size: Dia:

ANNULAR FILL:
Type: Bentonite Grout From: 0.00' To: 11.00'
Type: From: To:
Type: From: To:

Boring/Well Name: B-11
Project Name: Webb
Project Number:

GS ELEVATION: 0.00'
BOREHOLE DIA: 2.00in
TOTAL DEPTH: 11.00'
DATUM:
DATE STARTED: 10/28/97
DATE COMPLETED: 10/28/97
LOGGED BY: Rob Hesse
CERTIFIED BY: Beth Lamb,CEG
REMARKS:

SAMPLES: TIME COLLECTED	SAMPLES: TYPE / INTERVAL	SAMPLES: SAMPLE NUMBER	SAMPLES: RECOVERY	SAMPLES: BLOW COUNT	VAPOR READING (OVM)	DEPTH (feet)	MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						1	Concrete, 10-12 inches.			
						2				
						3				
						4	SILTY SAND, dark grayish brown (2.5Y 4/2), (10,30,60,0), fine grained sand, micaceous, medium dense, moist.	SM		
		B11-6				5				
						6				
						7				
						8				
						9				
		B11-11				10	color change to very dark grayish brown (2.5Y 3/2).			
						11	Total Depth = 11 feet.			

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Boring & Well Construction Log

Erler & Kalinowski, Inc.

BORING LOCATION: Jervis B. Webb Company

CONTRACTOR: Vironex, Inc.

DRILLING METHOD: Geoprobe Soil Probe

CONDUCTOR CASING: Type: — From: 0.00' To: 0.00' Dia: 0.00in

BLANK CASING: Type: — From: 0.0' To: 0.00' Dia: 0.00in

SCREENS: Type: — From: To: Size: Dia:

ANNULAR FILL:
Type: Bentonite Grout From: 0.00' To: 11.00'
Type: From: To:
Type: From: To:

Boring/Well Name: B-12
Project Name: Webb
Project Number:

GS ELEVATION: 0.00'
BOREHOLE DIA: 2.00in
TOTAL DEPTH: 11.00'
DATUM:
DATE STARTED: 10/28/97
DATE COMPLETED: 10/28/97
LOGGED BY: Rob Hesse
CERTIFIED BY: Beth Lamb,CEG
REMARKS:

SAMPLES: TIME COLLECTED	SAMPLES: TYPE / INTERVAL	SAMPLES: SAMPLE NUMBER	SAMPLES: RECOVERY	SAMPLES: BLOW COUNT	VAPOR READING (OVM)	DEPTH (feet)	MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						1	Concrete, 10-12 inches.			
						2				
						3				
						4	SILTY SAND, dark grayish brown (2.5Y 4/2), (10,30,60,0), fine grained sand, micaceous, medium dense, moist.	SM		
		B12-6				5				
						6				
						7				
						8				
						9				
		B12-11				10				
						11	Total Depth = 11 feet.			

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Boring & Well Construction Log

Erler & Kalinowski, Inc.

BORING LOCATION: Jervis B. Webb Company

CONTRACTOR: Vironex, Inc.

DRILLING METHOD: Geoprobe Soil Probe

CONDUCTOR CASING: Type: — From: 0.00' To: 0.00' Dia: 0.00in

BLANK CASING: Type: — From: 0.0' To: 0.00' Dia: 0.00in

SCREENS: Type: — From: To: Size: Dia:

ANNULAR FILL:
Type: Bentonite Grout From: 0.00' To: 11.00'
Type: From: To:
Type: From: To:

Boring/Well Name: B-13
Project Name: Webb
Project Number:

GS ELEVATION: 0.00'
BOREHOLE DIA: 2.00in
TOTAL DEPTH: 11.00'
DATUM:
DATE STARTED: 10/28/97
DATE COMPLETED: 10/28/97
LOGGED BY: Rob Hesse
CERTIFIED BY: Beth Lamb,CEG
REMARKS:

SAMPLES: TIME COLLECTED	SAMPLES: TYPE / INTERVAL	SAMPLES: SAMPLE NUMBER	SAMPLES: RECOVERY	SAMPLES: BLOW COUNT	VAPOR READING (OVM)	DEPTH (feet)	MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						0	Concrete, 10-12 inches.			
						1				
						2				
						3				
						4	SILTY SAND, dark grayish brown (2.5Y 4/2), (5,20,75,0), fine grained sand, micaceous, loose, moist.	SM		
		B13-6				5				
						6				
						7				
						8				
						9				
		B13-11				10				
						11	Total Depth = 11 feet.			

Boring & Well Construction Log

Erler & Kalinowski, Inc.

BORING LOCATION: Jervis B. Webb Company

CONTRACTOR: Vironex, Inc.

DRILLING METHOD: Geoprobe Soil Probe

CONDUCTOR CASING: Type: — From: 0.00' To: 0.00' Dia: 0.00in

BLANK CASING: Type: — From: 0.0' To: 0.00' Dia: 0.00in

SCREENS: Type: — From: To: Size: Dia:

ANNULAR FILL:
Type: Bentonite Grout From: 0.00' To: 11.00'
Type: From: To:
Type: From: To:

Boring/Well Name: B-14
Project Name: Webb
Project Number:

GS ELEVATION: 0.00'
BOREHOLE DIA: 2.00in
TOTAL DEPTH: 11.00'
DATUM: Mean Sea Level
DATE STARTED: 10/28/97
DATE COMPLETED: 10/28/97
LOGGED BY: Rob Hesse
CERTIFIED BY: Beth Lamb, CEG
REMARKS:

SAMPLES: TIME COLLECTED	SAMPLES: TYPE / INTERVAL	SAMPLES: SAMPLE NUMBER	SAMPLES: RECOVERY	SAMPLES: BLOW COUNT	VAPOR READING (OVM)	DEPTH (feet)	MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						0	Asphalt.			
						1				
						2				
						3				
						4	SILTY SAND, dark grayish brown (2.5Y 4/2), (5,20,75,0), fine grained sand, micaceous, medium dense, moist.	SM		
		B14-6				5				
						6				
						7				
						8				
						9				
						10				
		B14-11				11	Total Depth = 11 feet.			

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Boring & Well Construction Log

Erler & Kalinowski, Inc.

BORING LOCATION: 5030 Firestone Blvd., South Gate, CA

CONTRACTOR: West Hazmat Drilling

DRILLING METHOD: Hollow Stem Auger

CONDUCTOR CASING: Type: — From: 0.00' To: 0.00' Dia: 0.00in

BLANK CASING: Type: — From: 0.0' To: 0.00' Dia: 0.00in

SCREENS: Type: — From: To: Size: Dia:

ANNULAR FILL:
Type: Bentonite Grout From: 0.00' To: 52.50'
Type: From: To:
Type: From: To:

Boring/Well Name: B-15
Project Name: Webb
Project Number:

GS ELEVATION: 0.00'
BOREHOLE DIA: 2.00in
TOTAL DEPTH: 52.50'
DATUM:
DATE STARTED: 12/02/97
DATE COMPLETED: 12/02/97
LOGGED BY: Rob Hesse
CERTIFIED BY: Beth Lamb,CEG
REMARKS:

SAMPLES: TIME COLLECTED	TYPE / INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)	DEPTH (feet)	MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						1	Concrete, 5 inches. SILTY SAND, dark grayish brown (2.5Y 4/2), (5,30,65,0), fine grained sand, micaceous, very dense, moist.	SM		
						2				
						3				
						4	SAND, light brownish gray (2.5Y 6/2), (0,5,95,0), fine to medium grained, poorly sorted, dense, moist.	SP		
						5	SILTY SAND, dark grayish brown (2.5Y 4/2), (10,40,50,0), fine to medium grained sand, micaceous, no plasticity, very dense, moist.	SM		
						6				
						7				
						8				
						9				
		B15-10				10	SILTY CLAY, dark grayish brown (2.5Y 4/2), (60,30,10,0), fine grained sand, micaceous, medium to high plasticity.	CL		
						11	SILTY SAND, dark grayish brown (2.5Y 4/2), (5,30,65,0), fine to medium grained sand, dense, moist.	SM		

Boring & Well Construction Log

Boring/Well Name: B-15
Project Name: Webb
Project Number:

Erler & Kalinowski, Inc.

TIME COLLECTED	TYPE \ INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)		MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						13				
						14	CLAY, very dark gray (2.5Y 3/1), (70,20,10,0), fine grained sand, moderate to high			
						15	plasticity, firm, moist to wet.	CL		
		B15-16				16	CLAYEY SILT, dark grayish brown (2.5Y 4/2), (30,50,20,0), fine to medium grained			
						17	sand, slightly plastic, micaceou, firm, moist, interbedded with lensed SAND (< 1 inch), dark grayish brown (2.5Y 4/2), fine to medium grained, loose, moist.	ML		
						18				
						19				
		B15-20.5				20				
						21				
						22				
						23				
						24	SANDY SILT, dark grayish brown (2.5Y 4/2), (15,80,5,0), fine grained sand, micaceous,			
						25	dense, moist.			
		B15-26.5				26				
						27	CLAY, dark grayish brown (2.5Y 4/2), (70,20,10,0), micaceous, medium to high	CL		
						28	plasticity, soft to firm, moist to wet.			

Boring & Well Construction Log

Boring/Well Name: B-15
Project Name: Webb
Project Number:

Erler & Kalinowski, Inc.

TIME COLLECTED	TYPE \ INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)		MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
		B15-31				30				
						31				
						32	SANDY SILT, dark grayish brown (2.5Y 4/2), (15,50,35,0), fine grained sand, micaceous, very dense, moist.	ML		
						33	SILTY SAND, light brownish gray (2.5Y 6/2), (5,35,60,0), fine grained sand, very dense, moist.	SM		
						34	CLAY, dark grayish brown (2.5Y 4/2), (70,25,5,0), medium to high plasticity, soft to firm, moist.	CL		
		B15-35.5				35				
						36	SAND, light brownish gray (2.5Y 6/2), (5,15,80,0), fine to medium grained, poorly sorted, dense, moist.	SP		
						37	SILTY CLAY, dark grayish brown (2.5Y 4/2), (50,40,10,0), fine grained sand, medium to high plasticity, soft to firm, moist.	CL		
						38	SAND, gray (2.5Y 6/1), (5,10,85,0), fine grained, poorly sorted, dense, wet.	SP		
		B15-40				39				
						40				
						41				
						42				
						43	CLAYEY SILT, dark grayish brown (2.5Y 4/2), (20,70,10,0), fine grained sand, dense, wet.	ML		
		B15-44.5				44				
						45				

Boring & Well Construction Log

Boring/Well Name: B-15
Project Name: Webb
Project Number:

Erler & Kalinowski, Inc.

TIME COLLECTED	TYPE \ INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)		MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						47				
						48				
						49				
						50	Pushed probe to sound for water from 50-52 feet, no water.			
						51				
						52				
							Total Depth = 52.5 feet.			
						53				
						54				
						55				
						56				
						57				
						58				
						59				
						60				
						61				
						62				

Boring & Well Construction Log

Erler & Kalinowski, Inc.

BORING LOCATION: 5030 Firestone Blvd., South Gate, CA

CONTRACTOR: Vironex, Inc.

DRILLING METHOD: Hollow Stem Auger

CONDUCTOR CASING: Type: — From: 0.00' To: 0.00' Dia: 0.00in

BLANK CASING: Type: — From: 0.0' To: 0.00' Dia: 0.00in

SCREENS: Type: — From: To: Size: Dia:

ANNULAR FILL:
Type: Bentonite Grout From: 0.00' To: 51.50'
Type: From: To:
Type: From: To:

Boring/Well Name: B-16
Project Name: Webb
Project Number:

GS ELEVATION: 0.00'
BOREHOLE DIA: 8.00in
TOTAL DEPTH: 51.50'
DATUM: Mean Sea Level
DATE STARTED: 12/02/97
DATE COMPLETED: 12/02/97
LOGGED BY: Rob Hesse
CERTIFIED BY: Beth Lamb, CEG
REMARKS:

SAMPLES: TIME COLLECTED	TYPE / INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)	DEPTH (feet)	MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						1	Asphalt.			
						1	SILTY SAND, very dark grayish brown (2.5Y 3/2), (5,30,65,0), fine to	SM		
						2	medium grained sand, micaceous, dense, moist.			
						3				
						4				
			4			5				
		B16-6	5			5	color change to dark grayish brown (2.5Y 4/2).			
			8			6				
						7				
						8				
						9				
			7			10	SANDY SILT, dark grayish brown (2.5Y 4/2), (10,60,30,0), fine	ML		
		B16-11	9			10	grained sand, micaceous, very dense, moist.			
			10			11		SM		

Boring & Well Construction Log

Boring/Well Name: B-16
Project Name: Webb
Project Number:

Erler & Kalinowski, Inc.

TIME COLLECTED	TYPE / INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)		MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						13	SILTY SAND, very dark grayish brown (2.5Y 3/2), (5,25,70,0), fine to coarse grained sand, dense, moist.			
						14				
			6			15				
		B16-16	6					ML		
			6			16	SANDY SILT, olive brown (2.5Y 4/3), (15,60,25,0), fine- grained sand, micaceous, firm, moist.			
						17				
						18	color change to dark gray (2.5Y 4/1).			
						19				
			3			20	SILTY SAND, dark grayish brown (2.5Y 4/2), (10,30,60,0), fine grained sand, poorly sorted, micaceous, soft, moist.	SM		
		B16-21	4							
			6			21				
						22				
						23				
						24				
			3			25				
		B16-26	4				SILTY CLAY, gray (2.5Y 5/1) and dark gray (2.5Y 4/1), (60,35,5,0), fine grained sand, medium to high plasticity, firm, wet.	CL		
			7			26				
						27				
						28				

Boring & Well Construction Log

Boring/Well Name: B-16
Project Name: Webb
Project Number:

Erler & Kalinowski, Inc.

TIME COLLECTED	TYPE \ INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)		MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						30	SANDY SILT, dark gray (2.5Y 4/1), (15,50,35,0), fine grained sand, micaceous, dense, moist to wet.	SM		
		B16-31		7 8 6		31				
						32				
						33				
						34				
		B16-35.5		10 12 14		35	SAND, light grayish brown (2.5Y 6/2), (0,15,85,0), fine grained, well sorted, dense, moist.	SW		
						36				
						37	SANDY SILT, dark gray (2.5Y 4/1), (15,50,35,0), fine grained sand, micaceous, firm, wet.	ML		
						38				
						39				
				12		40				
		B16-41		12 14		41				
						42				
						43				
						44				
						45	CLAYEY SILT, dark gray (2.5Y 4/1), (30,60,10,0), fine grained sand, slightly plastic, firm, wet.			
		B16-46		15 18						

Boring & Well Construction Log

Boring/Well Name: B-16
Project Name: Webb
Project Number:

Erler & Kalinowski, Inc.

TIME COLLECTED	TYPE \ INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)		MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
				15		47				
				18						
				23		48	SANDY SILT, dark gray (2.5Y 4/1), (15,50,35,0), fine grained sand, micaceous, firm, moist.			
						49				
				14		50				
		B16-51		15						
				17		51	Total Depth = 51.5 feet.			
						52				
						53				
						54				
						55				
						56				
						57				
						58				
						59				
						60				
						61				
						62				

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Boring & Well Construction Log

Erler & Kalinowski, Inc.

BORING LOCATION: 5030 Firestone Blvd., South Gate, CA

CONTRACTOR: Vironex, Inc.

DRILLING METHOD: Hollow Stem Auger

CONDUCTOR CASING: Type: — From: 0.00' To: 0.00' Dia: 0.00in

BLANK CASING: Type: — From: 0.0' To: 0.00' Dia: 0.00in

SCREENS: Type: — From: To: Size: Dia:

ANNULAR FILL:
Type: Bentonite Grout From: 0.00' To: 61.50'
Type: From: To:
Type: From: To:

Boring/Well Name: B-17
Project Name: Webb
Project Number:

GS ELEVATION: 0.00'
BOREHOLE DIA: 8.00in
TOTAL DEPTH: 61.50'
DATUM: Mean Sea Level
DATE STARTED: 12/03/97
DATE COMPLETED: 12/03/97
LOGGED BY: Rob Hesse
CERTIFIED BY: Beth Lamb, CEG
REMARKS:

SAMPLES: TIME COLLECTED	TYPE / INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)	DEPTH (feet)	MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						1	Asphalt.	SM		
						2	SILTY SAND, very dark gray (2.5Y 3/1), (15,30,55,0), fine grained sand, micaceous, dense, moist.			
				4		3				
				4						
				5		4	color change to dark grayish brown (2.5Y 4/2).			
				4		5				
		B17-6		5						
				8		6				
						7				
				4		8				
				6						
				8		9				
						10	SAND, dark grayish brown (2.5Y 4/2), (5,15,80,0), fine to medium grained sand, well sorted, micaceous, dense, wet.	SW		
				7						
		B17-11		7		11				
				8						

Boring & Well Construction Log

Boring/Well Name: B-17
Project Name: Webb
Project Number:

Erler & Kalinowski, Inc.

TIME COLLECTED	TYPE \ INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)		MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
				6		13	SANDY SILT, dark grayish brown (2.5Y 4/2), (10,60,30,0), fine grained sand, micaceous, dense, saturated.	ML		
				7						
				7		14				
						15	color change to dark gray (2.5Y 4/1).			
				4						
		B17-16		4		16				
				7						
						17				
				7			CLAYEY SILT, dark gray (2.5Y 4/1), (30,60,10,0), fine grained sand, micaceous, slightly plastic, firm, wet.			
				8		18				
				9						
						19				
				8		20				
		B17-21		10			color change to dark graysh brown (2.5Y 4/2), saturated.			
				10		21				
						22	CLAYEY SILT, gray (2.5Y 5/1) with dark yellowish brown (10YR 4/4) specks, (40,60,0,0), slightly plastic, firm, wet.			
				10						
				11		23				
				12						
						24	CLAY, gray (2.5Y 5/1) mottled with dark gray (2.5Y 4/1), (60,35,5,0), medium to high plasticity, firm, wet.	CL		
				7		25				
		B17-26		11						
				13		26				
						27				
				10	0					
				12		28	SANDY SILT, dark gray (2.5Y 4/1), (15,50,35,0), fine grained sand, micaceous, firm, wet.	ML		
				13						

Boring & Well Construction Log

Boring/Well Name: B-17
Project Name: Webb
Project Number:

Erler & Kalinowski, Inc.

TIME COLLECTED	TYPE \ INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)		MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						30				
				13						
				14		31				
		B17-31.5		15			CLAYEY SILT, dark gray (2.5Y 4/1), (30,50,20,0), fine grained sand,			
						32	slightly plastic, firm, wet.			
				10						
				12		33				
				12				SW		
						34	SAND, light grayish brown (2.5Y 6/2), (0,15,85,0), fine grained, well sorted, dense, wet.			
				16		35		ML		
		B17-36		17			SANDY SILT, dark gray (2.5Y 4/1), (15,50,35,0), fine grained sand,			
				18		36	micaceous, firm, wet.			
						37				
				9						
				13		38	color change to dark grayish brown (2.5Y 4/2).			
				15						
						39				
				13						
		B17-41		14		40	CLAYEY SILT, dark gray (2.5Y 4/1), (30,60,10,0), fine grained sand, slightly plastic, firm, wet.			
				15		41				
						42				
				14						
				15		43				
				16						
						44				
							SANDY SILT, dark gray (2.5Y 4/1), (15,50,35,0), fine grained sand,			
				13		45	micaceous, firm, wet.			
		B17-46		15						

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Boring & Well Construction Log

Boring/Well Name: B-17
Project Name: Webb
Project Number:

Erler & Kalinowski, Inc.

TIME COLLECTED	TYPE \ INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)		MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
				16			size of sand grains increases to fine to medium grained.			
						47				
				14						
				16		48				
				16						
						49				
						50				
						51				
						52				
				10						
		B17-53.5		12		53				
				13						
						54				
				13		55				
		B17-56		13						
				14		56				
						57	water level 56.9 feet.			
				13						
				15		58				
				16			SILTY SAND, gray (2.5Y 5/1), (5,25,70,0), fine to coarse grained	SM		
						59	sand, well sorted, dense, saturated.			
						60				
				13						
				14		61				
				16						
						62	Total Depth = 61.5 feet.			

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Boring & Well Construction Log

Erler & Kalinowski, Inc.

BORING LOCATION: 5030 Firestone Blvd., South Gate, CA

CONTRACTOR: Vironex, Inc.

DRILLING METHOD: Hollow Stem Auger

CONDUCTOR CASING: Type: — From: 0.00' To: 0.00' Dia: 0.00in

BLANK CASING: Type: — From: 0.0' To: 0.00' Dia: 0.00in

SCREENS: Type: — From: To: Size: Dia:

ANNULAR FILL:
Type: Bentonite Grout From: 0.00' To: 46.50'
Type: From: To:
Type: From: To:

Boring/Well Name: B-18
Project Name: Webb
Project Number:

GS ELEVATION: 0.00'
TOTAL DEPTH: 46.50'
BOREHOLE DIA: 8.00in
DATUM: Mean Sea Level
DATE STARTED: 12/03/97
DATE COMPLETED: 12/03/97
LOGGED BY: Rob Hesse
CERTIFIED BY: Beth Lamb, CEG
REMARKS:

SAMPLES: TIME COLLECTED	TYPE / INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)	DEPTH (feet)	MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						1	Concrete, 6 inches. Asphalt, 6 inches. SILTY SAND, olive brown (2.5Y 4/3), (5,30,65,0), fine grained sand, micaceous, moist, from cuttings.	SM		
					0.0 ppm	2				
					0.0 ppm	3				
			3			4				
		B18-6	4			5	color change to very dark grayish brown (2.5Y 3/2).			
			4			6				
					4.0 ppm	7				
			10		0.0 ppm	8	color change to very dark grayish brown (2.5Y 3/2).			
			11			9				
			14			10				
			9		8.0 ppm	11	CLAYEY SILT, grayish brown (2.5Y 5/2), (30,60,10,0), fine grained sand, slightly plastic, firm, moist.	ML		
		B17-11	11		0.0 ppm					
			12							

Boring & Well Construction Log

Boring/Well Name: B-18
Project Name: Webb
Project Number:

Erler & Kalinowski, Inc.

TIME COLLECTED	TYPE \ INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)		MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
			7			13				
			7		6.0 ppm		SILTY SAND, grayish brown (2.5Y 5/2), (5,30,65,0), fine grained			
			12		0.0 ppm	14	sand, micaceous, dense, moist to wet.	SM		
							CLAYEY SILT, dark grayish brown (2.5Y 4/2) and mottled with light			
			7			15	brownish gray (2.5Y 6/2), (30,60,10,0), fine grained sand, slightly	ML		
		B18-16	8				plastic, firm, moist.			
			12			16				
						17				
			10							
			11		0.0 ppm	18				
			11				SANDY SILT, dark grayish brown (2.5Y 4/2), (10,60,30,0), fine			
						19	grained sand, micaceous, dense, moist.			
			8		4.0 ppm	20				
		B18-21	10		0.0 ppm		CLAYEY SILT, dark grayish brown (2.5Y 4/2), (30,60,10,0), fine			
			11			21	grained sand, slightly plastic, firm, moist.			
			11		17.0 ppm					
					0.0 ppm	22				
			15							
			15			23	SANDY SILT, dark grayish brown (2.5Y 4/2), (10,60,30,0), fine			
			16				grained sand, dense, moist.			
			8			24				
			10							
		B18-25.5	16			25				
			20							
			8			26	CLAY, grayish brown (2.5Y 5/2), (60,35,5,0), medium to high			
			11				plasticity, firm, moist.	CL		
		B18-27.5	14			27				
			15							
						28	CLAYEY SILT, dark gray (2.5Y 4/1), (30,60,10,0), fine grained sand,	ML		
							micaceous, slightly plastic, firm, moist.			

Boring & Well Construction Log

Boring/Well Name: B-18
Project Name: Webb
Project Number:

Erler & Kalinowski, Inc.

TIME COLLECTED	TYPE / INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)		MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
				12		30				
		B18-31		13		31				
						32				
						33				
						34				
				14		35				
		B18-36		14				SW		
				15		36	SAND, light grayish brown (2.5Y 6/2), (0,15,85,0), fine to medium grained sand, well sorted, dense, moist.			
						37				
						38				
						39				
				13		40	CLAYEY SILT, dark gray (2.5Y 4/1), (30,60,10,0), fine grained sand, slightly plastic, firm, moist.	ML		
		B18-41		18				SM		
				20		41	SILTY SAND, gray (2.5Y 5/1), (5,10,85,0), fine grained sand, dense, moist to wet.			
						42				
						43				
						44				
				18		45	wetness increases to wet to saturated.			
		B18-46		20						

Boring & Well Construction Log

Boring/Well Name: B-18
Project Name: Webb
Project Number:

Erler & Kalinowski, Inc.

TIME COLLECTED	TYPE \ INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)		MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
				21		47	Total Depth = 46.5 feet.			
						48				
						49				
						50				
						51				
						52				
						53				
						54				
						55				
						56				
						57				
						58				
						59				
						60				
						61				
						62				

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Boring & Well Construction Log

Erler & Kalinowski, Inc.

BORING LOCATION: 5030 Firestone Blvd., South Gate, CA

CONTRACTOR: West Hazmat Drilling

DRILLING METHOD: Hollow Stem Auger

CONDUCTOR CASING: Type: From: 0.00' To: 0.00' Dia: 0.00in

BLANK CASING: Type: From: 0.0' To: 0.00' Dia: 0.00in

SCREENS: Type: From: To: Size: Dia:

ANNULAR FILL:
Type: Bentonite Grout From: 0.00' To: 46.50'
Type: From: To:
Type: From: To:

Boring/Well Name: B-19
Project Name: Webb
Project Number:

GS ELEVATION: 0.00'
BOREHOLE DIA: 8.00in
TOTAL DEPTH: 46.50'
DATUM:
DATE STARTED: 12/03/97
DATE COMPLETED: 12/03/97
LOGGED BY: Rob Hesse
CERTIFIED BY: Beth Lamb,CEG
REMARKS:

SAMPLES: TIME COLLECTED	SAMPLES: TYPE / INTERVAL	SAMPLES: SAMPLE NUMBER	SAMPLES: RECOVERY	SAMPLES: BLOW COUNT	VAPOR READING (OVM)	DEPTH (feet)	MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						1	Concrete, 10-12 inches.			
						2	SANDY SILT (fill). Concrete, 10-12 inches.			
						3				
						4	SANDY SILT, light olive brown (2.5Y 5/3), mottled with dark gray (2.5Y 4/1), (20,50,30,0), fine grained, micaceous, slightly plastic, firm, moist.	SM		
						5				
						6				
						7	SANDY SILT, very dark grayish brown (2.5Y 3/2), (10,30,60,0), fine to medium grained sand, micaceous, nonplastic, firm, moist.			
						8				
						9	SAND, light olive brown (2.5Y 5/3), (0,20,80,0), fine to medium grained, poorly graded, medium dense, moist.	SP		
						10				
						11				

Boring & Well Construction Log

Boring/Well Name: B-19
Project Name: Webb
Project Number:

Erler & Kalinowski, Inc.

TIME COLLECTED	TYPE \ INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)		MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						13				
						14	CLAYEY SILT, dark grayish brown (2.5Y 4/2), (30,60,10,0), moderate plasticity, low toughness, soft to firm, moist.	ML		
			4			15				
		B19-16	4				SANDY SILT, grayish brown (2.5Y 5/2), (10,60,30,0), fine grained			
			5			16	sand, micaceous, dense, moist.			
						17				
						18				
						19				
			9			20				
		B19-21	10							
			10			21				
						22				
						23				
						24				
			8			25				
		B19-26	8							
			9			26				
						27				
						28				

Boring & Well Construction Log

Boring/Well Name: B-19
Project Name: Webb
Project Number:

Erler & Kalinowski, Inc.

TIME COLLECTED	TYPE \ INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)		MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						30	CLAYEY SILT, dark gray (2.5Y 5/2), (10,60,30,0), fine grained sand, micaceous, slightly plastic, firm, wet.			
		B19-31		8						
				10						
				10		31				
						32				
						33				
						34				
						35	SAND, light grayish brown (2.5Y 6/2), (0,15,85,0), fine to medium grained sand, well sorted, dense, moist.	SW		
				15						
				15						
		B19-36.5		17		36				
						37				
						38				
						39				
				12		40	SILTY SAND, gray (2.5Y 5/1), (5,20,75,0), fine grained sand, dense, moist to wet.			
		B19-41		14						
				15		41				
						42				
						43				
						44				
						45				
				8						
		B19-46		11						

Boring & Well Construction Log

Boring/Well Name: B-19
Project Name: Webb
Project Number:

Erler & Kalinowski, Inc.

TIME COLLECTED	TYPE \ INTERVAL	SAMPLE NUMBER	RECOVERY	BLOW COUNT	VAPOR READING (OVM)		MATERIAL DESCRIPTION	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
				11						
						47	Total Depth = 46.5 feet.			
						48				
						49				
						50				
						51				
						52				
						53				
						54				
						55				
						56				
						57				
						58				
						59				
						60				
						61				
						62				

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Appendix C

InterPhase Report on Soil Gas Sampling

INTERPHASE
ENVIRONMENTAL CHEMISTRY SPECIALISTS

Soil Gas Survey
Jervis B. Webb Co.
5030 Firestone Boulevard
Southgate, California

Project Number 97119

Submitted to:

Mr. Steve Miller
Erler & Kalinowski, Inc.
2951 28th Street, Suite 1020
Santa Monica, California 90405

Submitted by:

InterPhase Environmental, Inc.
6200 Peachtree Street
Los Angeles, California 90040

December 17, 1997

INTERPHASE
ENVIRONMENTAL CHEMISTRY SPECIALISTS

INTERPHASE ENVIRONMENTAL, INC.

SOIL GAS DOCUMENT REVIEW SHEET

Project Number: 97119

Project Name: Soil Gas Survey
Jervis B. Webb, Co.
5030 Firestone Boulevard
Southgate, California

Client: Erler & Kalinowski, Inc.
2951 28th Street, Suite 1020
Santa Monica, California 90405

Lab ID: Phase 3
Analyzed by: John C. Tangeman, Project Chemist
Reviewed by: Scott A. Norris, Senior Chemist

Report Prepared By: _____ Date: December 17, 1997
Scott A. Norris, Senior Chemist
InterPhase Environmental, Inc.

6200 PEACHTREE STREET
LOS ANGELES-CA 90040
213-278-7700 800-457-3300
FAX 213-278-7707

Table of Contents

LIST OF TABLES

Introduction

This report presents the methods and results of a soil gas investigation performed December 1 & 2, 1997 at the Jervis B. Webb, Co. facility located at 5030 Firestone Boulevard in Southgate, California by InterPhase Environmental, Inc. (InterPhase) for Erler & Kalinowski, Inc. Soil gas sampling and analyses were performed in accordance with the California Regional Water Quality Control Board - Los Angeles Region (CRWQCB-LA) guidelines for active soil gas investigations under the Well Investigation Program (WIP) revised February 1997.

Background & Theory

Soil gas surveys consist of the sampling and analysis of the soil gases that reside in the pore space of the unsaturated zone above the water table. Because many common organic compounds and industrial solvents exhibit significant vapor pressures and relatively low solubility in water, their introduction into subsurface soils results in vapor phase permeation and transport. Should these chemicals reach the water table and travel with the groundwater, vapors will continue to emanate from the contaminated groundwater into overlying soil. Thus, organic contamination of the subsurface and, possibly, of groundwater can be detected by measuring the concentration of volatile organic compounds (VOCs) in the soil gas.

Whatever the source of the VOC in soil gas, its concentration is representative of soil contamination at the point of measurement. Volatile organic contaminants are present in the gas phase in unsaturated pore spaces, in the water contained in the unsaturated soils, and are adsorbed on the soil particles. The total soils contaminant concentration is the sum of the VOCs contained in the three phases divided by soil mass.

Within the soil volume examined by soil gas sampling, typically less than one cubic foot, equilibrium between the three phases is rapidly attained. The partitioning of the VOCs between gas, liquid and solid phases depends on both the soil properties and the chemical properties of the organic contaminants. Important soil parameters that affect the distribution of VOCs in three phases include the soil's natural and anthropogenic organic content, soil moisture, soil particle size and mineralogy, temperature, lithology, and heterogeneity. Thus, given the chemical properties of the VOC and either measurements or reasonable estimates of relevant soil parameters, soil-gas data can be used to calculate semi-quantitative estimates of soil contamination.

The major uncertainties in estimating soil concentration from soil gas concentration data are the organic and moisture content of the soils. Chemical properties of particular organic compounds are well known, (i.e., vapor pressure, solubility), and the other relevant soil parameters (i.e., bulk density, porosity) have relatively little effect on soil concentration estimates. Use of soil gas to infer concentrations of sources at distance (such as groundwater plumes) is necessarily much more qualitative. Soil gas data used in this manner are limited by the lack of information

regarding the soil parameters interposed between the source and sampling point. It is, therefore, generally not possible to quantitatively estimate groundwater concentrations from soil gas data collected at distance from the saturated interface. Away from source areas (i.e., underground storage tanks, surface spills, etc.) where only the groundwater is providing a significant soil gas concentration, soil gas can be an excellent relative indicator of groundwater contamination. The effectiveness of soil gas surveys to delineate groundwater contamination is variable, however, and depends on the depth to groundwater, contaminant concentration in the groundwater, distribution of air permeabilities in the unsaturated zone, and attenuation of the volatile organics by biodegradation or adsorption.

Scope of Work

This soil gas survey was December 1 & 2, 1997 at the Jervis B. Webb, Co. facility located at 5030 Firestone Boulevard in Southgate, California. InterPhase collected soil vapor samples at depths ranging from two (2) to five (5) feet below ground surface (bgs).

A total of thirty-seven (37) soil gas samples and three (3) duplicate soil gas samples were collected and analyzed on site for this project. This total does not include the two additional samples analyzed as part of the purge volume versus analyte concentration study performed at the first sampling location as required by the WIP. The 2, 4, and 8 purge volume samples collected at location SG-08-5' are labeled A, B, and C, respectively. As a result of this test, eight purge volumes were used for the remaining samples.

December 2, InterPhase sampled location SG-23-5' and collected a sample in a summa canister for analysis via EPA method T0-14 by an off site laboratory to fulfill the analyte confirmation requirement of WIP. The results of this analysis are included in *Appendix D: Analyte Confirmation Sample Results*.

All soil gas samples were analyzed on site for the VOCs listed in Table 1. The analytical results, in micrograms of contaminant per liter of soil gas (µg/L), are included in *Appendix A: Summary of Analytical Results*.

Table 1. Target Analytes

trichlorofluoromethane (F 11)	dichlorodifluoromethane (F 12)
methylene chloride (CH_2Cl_2)	1,1,2-trichlorotrifluoroethane (F 113)
1,1-dichloroethane (1,1-DCA)	vinyl chloride
chloroform ($CHCl_3$)	chloroethane
1,1,1-trichloroethane (1,1,1-TCA)	1,1-dichloroethene (1,1-DCE)
carbon tetrachloride (CCl_4)	cis-1,2-dichloroethene (c-1,2-DCE)
1,2-dichloroethane (1,2-DCA)	trans-1,2-dichloroethene (t-1,2-DCE)
trichloroethene (TCE)	benzene
1,1,2- trichloroethane (1,1,2-TCA)	toluene
tetrachloroethene (PCE)	ethylbenzene
1,1,1,2-tetrachloroethane (1,1,1,2-TCA)	m/p-xylenes
1,1,2,2-tetrachloroethane (1,1,2,2-TCA)	o-xylene

Methods and Instrumentation

Sample Collection

Soil Gas Sampling Apparatus

Soil gas probes were advanced using a Geoprobe® Direct Push Sampling Rig. InterPhase uses the "Post-Run" method of sampling. This means that sample tubing is not carried in the probe rod during probe driving, but rather inserted down the bore once the appropriate sample depth is reached. Sampling probe rod consists of 1 to 2-inch hardened steel. Gas samples are collected from the point holder adaptor mounted on the distal (deep) end of the sampling train. A stainless steel adapter is connected to ¼-inch clean, virgin polyethylene tubing, lowered down the bore of the drive probe string, and mated to the point holder adaptor. O-ring connections enable the system to deliver a vacuum-tight seal to assure that the sample is collected at the bottom. Hamilton or Dynatech 10-cc gas-tight, glass syringes are used to collect soil gas samples.

Pre-Sample Purge

To ensure a representative sample, discrete volumes of gas are purged to rid the tubing of atmospheric air and to allow subsurface air to enter. The volume of gas removed is determined by the volume of tubing employed and the investigative goals of the project. Unlike groundwater sampling, purging of a soil gas probe is designed to remove only the ambient air in the system.

InterPhase scientists have conducted field experiments to estimate the capture zone around the end of the soil gas sampling probe in order to demonstrate that vapor samples are not diluted with atmospheric air. Capture zone estimates are calculated for sandy soils and for silty or clayey soils in the following example:

Sampling Depth: 5 feet (152.4 cm)
Volume of sampling probe (¼ " polyethylene tubing): 5 mL per foot
Purge Volume: 75 mL (Approximately 3 probe volumes - 5' polyethylene tube)

Air porosity of sandy soils: 30% = 0.3
Air porosity of silt or clay soils: 20% = 0.2

Volume of soil gas collected from sandy materials:
75 mL/0.3 = 250 mL

Volume of soil gas collected from silty or clayey materials:
75 mL/0.2 = 375 mL

Assuming isotropic vapor flow, the volume of soil gas collected may be described as a sphere of radius r with the origin at the tip of the soil gas probe. Therefore,

Sand: $(4/3)(\pi)(r^3) = 250$ mL (1mL = 1cm^3)
$r = 3.9$ cm

Silt/Clay: $(4/3)(\pi)(r^3) = 375$ mL
$r = 4.5$ cm

For this example, the purge volume of 75 mL ensures that three volumes of the sampling apparatus is evacuated (5' polyethylene tubing x 5 mL/foot x 3 purge volumes = 75 mL). The calculated radius of influence, approximately 4 cm, is substantially less than the distance to ground surface (152.4 cm), thus minimizing the potential for sample dilution with atmospheric air.

Sample Analysis

Gas chromatographic techniques were used to identify and measure concentrations of the various compounds. Two electron capture detectors (ECDs), which respond to halogenated organic compounds, are used to quantify most of the halogenated compounds. Each detector has a different column, with different polarity. The first column is a J&W Scientific DB-624. The second is a DB-1. During all analyses the columns are run through a temperature program starting at 55°C, hold for 1.2 minutes, ramp at 10°/minute to 150°C. A photoionization detector (PID), which responds to aromatic organic compounds and some halogenated organic compounds is used to quantify the remaining analytes. During all analyses this column was run through a temperature program starting at 60°C, hold for 1.2 minutes, ramp at 10°/minute to 150°C.

Gaseous standards were used for identification and quantitative measurement of target analytes. The calibration standards were prepared by InterPhase Environmental, Inc., or purchased from Scott Specialty Gases.

Decontamination of Equipment

Sampling equipment is decontaminated by methods consistent with the equipment's use. Sample tubing is used for one sampling event and discarded. Reusable steel parts including adaptors and point holders are cleaned by baking in an oven at 100°C. Syringes are cleaned with Alconox and water and then placed in an oven and heated. Methanol or hexane rinses that can carry contamination, contribute to background, and potentially trap VOCs, are not employed.

Separate storage areas are provided for used and cleaned equipment. The probe rod and drive points are stored in clean storage racks on the sampling rigs. Care is taken with the rods and points to eliminate both soil-surface and cross-hole contamination. No equipment that is in contact with soil gas is used or reused without being decontaminated.

Standards

Neat reagent-grade compounds were used for preparation of stock liquid standards. The stock standard liquid mixture was prepared by adding the desired mass of each compound of interest to a methanol solution. This standard solution is then sealed in single use glass ampules.

For calibration, an ampule was broken open and an aliquot was added to a sealed, nitrogen filled container and heated until the methanol evaporates. This standard gas mixture was then injected into the gas chromatograph (GC) and analyzed to determine the instrument response to each analyte.

Instrumentation

The make and model of the equipment used in the mobile laboratory to perform on-site analyses include:

Varian 3400 Gas Chromatograph;
Hewlett-Packard 5890 Gas Chromatograph;
Varian Electron Capture Detectors;
OI Instruments Photoionization Detector;
J&W Scientific DB-624, 30m Megabore Column;
J&W Scientific DB-1, 30m Megabore Column;
Scientific Software PC-Based Data System.

Quality Assurance / Quality Control

Quality control and quality assurance are achieved through strict laboratory protocol. A system blank was analyzed daily to demonstrate absence of interference in the sampling and analytical systems. An ambient air sample was also analyzed each day to monitor for any possible interference. The ambient air results also help establish background levels and on-site personnel safety.

A three-point curve was generated during the initial calibration of the gas chromatograph. A mid-range calibration check is performed daily to verify instrument response. As required by the WIP QA/QC protocols, the percent relative standard deviation (%RSD) of the mid-point continuing calibration check should be less than 15% except for the freons, vinyl chloride and chloroethane, which must be within 25%.

Response Factors

When the external standard method is used, the computer-integration system calculates response factors (RF) as follows:

$$RF = C/A$$

where C = concentration of analyte in the calibration standard, µg/L
A = area of analyte to be measured

The concentration of the unknowns is determined by comparing the peak area of the unknowns to the peak area of the external standards as follows:

$$C = (A)(RF)$$

where C = concentration of the analyte in sample in µg/L
RF = relative average response factor
A = area of analyte being measured

The practical quantitation limits of reported detection ranged from 0.01 to 1.0 micrograms per liter (µg/L) for all compounds. Higher reporting limits may result from analysis of high concentration samples due to the necessity of using a reduced sample volume or dilutions for analysis. Results of analyses are reported to the nearest µg/L in two significant figures.

Data Interpretation

Vapor-phase diffusion is the prevailing mechanism by which soil gas analytes are transported in the subsurface. The presence of an analyte in soil gas is a function of the phase, location and concentration of the source, physical properties of the analyte, and the media through which transport occurs. The site-specific variability among soil properties profoundly affect vapor-phase diffusion and must be considered in the interpretation of analyte distribution in the soil gas. Among these soil properties are: organic content, soil moisture, soil particle size and mineralogy, and air-filled porosity. Anomalies in the spatial distribution (vertically or laterally) of analyte concentrations in soil gas samples should be noted.

Although isoconcentration contours of soil gas data can be plotted on site maps, it should be emphasized that these isotherms are only representative of the contaminant distribution in soil vapor. Isoconcentration contours for compounds in soil or groundwater may differ in extent and orientation from those delineated in soil gas. Inherent assumptions that are infrequently discussed in preparing soil gas isotherms are:

- Soil gas concentration data are adequate to describe the spatial distribution of contaminants underlying the site
- Vertical anisotropy is either insignificant or can be described by existing site data
- Vapor barriers that may impede the gaseous diffusion of analytes are either nonexistent or do not vary over the investigation site
- Soil texture, water content, and air-filled porosity are spatially uniform over the site

In cases where data values in parts per million by volume (ppm_v) are desired, the conversion of soil gas concentrations from µg/L (gas) to ppm_v can be achieved with the following equation.

$$C_{ppm_v} = \frac{(C_{\mu g/L})(24.1)}{(mw)(P)}$$

Where;

C_{ppm_v}	soil gas concentration in ppm_v
$C_{\mu g/L}$	soil gas concentration in µg/L (gas)
24.1	molar volume at normal room temperature (70°F) in (L)(atm)/mole
mw	molecular weight in grams/mole
P	pressure in atmospheres (typically assumed to be 1 atm)

Using toluene, which has a molecular weight of 92.14, as an example: at normal temperature and one atmosphere of pressure, 1 µg/L of toluene would be equivalent to 0.26 ppm_v.

Table 2 presents the molecular weights that may be used in the above equation to calculate the ppm_v values and reporting limits for the target analytes.

Table 2. Molecular Weights of Target Analytes

Analytes	Molecular Weight
F-12	120.91
F-113	187.38
F-11	137.38
CH_2Cl_2	84.94
1,1-DCA & 1,2-DCA	98.96
$CHCl_3$	119.39
1,1,1-TCA & 1,1,2-TCA	133.41
CCl_4	153.82
TCE	131.39
PCE	165.83
1,1,1,2-TCA & 1,1,2,2-TCA	167.85
vinyl chloride	62.5
chloroethane	64.52
1,1-DCE & c-1,2-DCE & t-1,2-DCE	96.95
benzene	78.12
toluene	92.15
ethylbenzene & xylenes	106.17

Results

Appendix A: Summary of Analytical Results presents the measured concentrations of all samples, blanks, and duplicates analyzed on site during this investigation. Concentrations are reported in micrograms per liter (µg/L) of soil gas.

Due to the wide range of concentrations of TCE and PCE often found in soil gas samples, InterPhase uses two different detectors to quantify these analytes. The ECD is more sensitive and is typically used for low levels of these analytes. When either TCE or PCE is detected at concentrations that exceed the calibrated linear range of the ECD, the PID may be used for quantification rather than diluting and reanalyzing the sample. Diluting samples means fewer samples can be analyzed for a given project and the reporting limits for certain analytes are higher than the 1 µg/L specified in WIP.

All calibration and QA/QC measures are applied to both detectors. When TCE and PCE are detected, a numerical value is entered in the *Summary of Analytical Results* in the appropriate row. A value of NU (not used) is entered in the row next to the detector that was not used to quantify that analyte for that specific analysis.

Appendix B: Quality Control Summary presents the results of the daily mid-level continuing calibration verification standards.

The results of the analyte confirmation sample collected at location SG-23-5' are included in *Appendix D: Analyte Confirmation Sample Results.*

Analyte confirmation analysis as defined by the WIP Guidelines, is meant strictly to confirm the identification of analytes made by a field laboratory (WIP, Section 3.11). Results from the analysis of the confirmation sample collected at SG-23-5' indicate both laboratories were in agreement with the compounds identified in this sample.

InterPhase and EAS each reported 1,1,1-trichloroethane (111-TCA), trichloroethene (TCE), and tetrachloroethene (PCE) at this sample location.

EAS detected dichloromethane (methylene chloride, CH_2Cl_2) toluene, styrene, and xylenes in this sample. Styrene was not among the target analytes for the mobile laboratory for this project. The toluene and xylene concentrations were below InterPhase's reporting limits for these compounds.

This data indicates that the confirmational sample achieved it's goal of confirming the compound identification of InterPhase's mobile laboratory. Though not a specific goal of this test, the numerical results can be compared. To convert the EAS results from $\mu g/m^3$ to $\mu g/L$, divide by 1000. When this is done, the results show InterPhase's results differ from EAS's by the following ratios: 111-TCA (low by a factor of 4.2), TCE (low by a factor of 1.4), and PCE (low by a factor of 2.7). The immediate reasons for the differences are not known, but may be attributable to one or more of the following: chemical and physical properties of the specific analytes, chemical and physical properties of the subsurface, differences in sample collection methods, sample volume, sampling rate, applied vacuum during sampling, sample holding time and analytical methods.

Appendix A:

Summary of Analytical Results

Summary of Analytical Results

Lab ID: Phase 3

Project #: 97119
Client: Erler & Kalinowski

Site: 5030 Firestone Blvd.
Southgate, California

Sample ID :	System / Syringe Blank	Ambient Air	SG-8A-5'	SG-8B-5'	SG-8C-5'	SG-1-5'	SG-2-5'	SG-3-5'	SG-4-5'
Date :	12/1/97	12/1/97	12/1/97	12/1/97	12/1/97	12/1/97	12/1/97	12/1/97	12/1/97
Time Collected :	NA	NA	8:11	8:31	8:44	9:12	9:35	9:57	10:15
Time Analyzed :	7:05	7:58	8:12	8:31	8:46	9:15	9:36	9:58	10:18
Run #:	001	005	006	007	008	009	010	011	012
Volume Analyzed (ECD1/ECD2/PID, µL) :	300/200/500	300/100/500	50/10/500	50/10/500	50/10/500	50/10/100	50/10/200	50/10/300	50/10/500
Second Injection Volume									

Compound Name	*Detector*	*RT (min)*	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
trichlorofluoromethane (F-11)	ECD1	1.74	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
methylene chloride (CH_2Cl_2)	ECD1	2.28	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane (11-DCA)	ECD1	2.69	<1	<1	<1	<1	<1	<1	<1	<1	<1
chloroform ($CHCl_3$)	ECD1	3.28	<0.01	<0.01	<0.01	<0.01	<0.01	**0.055**	<0.01	<0.01	<0.01
1,1,1-trichloroethane (111-TCA)	ECD1	3.44	<0.01	<0.01	**0.46**	**0.65**	**0.59**	**0.50**	**0.50**	**0.15**	**0.13**
carbon tetrachloride (CCl_4)	ECD1	3.58	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-dichloroethane (12-DCA)	ECD1	3.72	<1	<1	<1	<1	<1	<1	<1	<1	<1
trichloroethene (TCE)	ECD1	4.23	<0.01	<0.01	**2.3**	**4.4**	**4.5**	**9.6**	**4.5**	**3.9**	**8.9**
1,1,2-trichloroethane (112-TCA)	ECD1	5.79	<1	<1	<1	<1	<1	<1	<1	<1	<1
tetrachloroethene (PCE)	ECD1	5.98	<0.01	<0.01	**1.1**	**4.1**	**5.8**	NU	**4.7**	**1.6**	**5.2**
1,1,1,2-tetrachloroethane (1112-TCA)	ECD1	6.99	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane (1122-TCA)	ECD1	9.34	<1	<1	<1	<1	<1	<1	<1	<1	<1
dichlorodifluoromethane (F-12)	ECD2	2.06	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<1
1,1,2-trichlorotrifluoroethane (F-113)	ECD2	3.65	<0.1	<0.1	<1	<1	<1	<1	<1	<1	<1
vinyl chloride	PID	1.42	<1	<1	<1	<1	<1	<1	<1	<1	<1
chloroethane	PID	1.79	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethene (11-DCE)	PID	2.33	<1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-dichloroethene (t-12-DCE)	PID	2.77	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-dichloroethene (c-12-DCE)	PID	3.22	<1	<1	<1	<1	<1	<1	<1	<1	<1
benzene	PID	4.10	<1	<1	<1	<1	<1	<1	<1	<1	<1
trichloroethene (TCE)	PID	4.63	<1	<1	NU	NU	NU	NU	NU	NU	NU
toluene	PID	5.75	<1	<1	<1	<1	<1	<1	<1	<1	<1
tetrachloroethene (PCE)	PID	6.52	<1	<1	NU	NU	NU	**23**	NU	NU	NU
ethylbenzene	PID	7.27	<1	<1	<1	<1	<1	<1	<1	<1	<1
m/p-xylenes	PID	7.40	<1	<1	<1	<1	<1	<1	<1	<1	<1
o-xylene	PID	7.78	<1	<1	<1	<1	<1	<1	<1	<1	<1
% Surrogate 1 Recovery	PID	4.217	NA	118	117	114	111	108	78	104	111
% Surrogate 2 Recovery	ECD	4.542	NA	114	108	103	118	107	82	117	110
% Surrogate 3 Recovery	ECD	6 25	NA	102	106	93	99	MI	124	83	93

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Summary of Analytical Results

Lab ID: Phase 3

Project #: 97119
Client: Erler & Kalinowski

Site: 5030 Firestone Blvd.
Southgate, California

Sample ID :			SG-5-5'	duplicate SG-5-5'	SG-6-5'	SG-7-5'	SG-10-5'	SG-13-5'	SG-12-5'	SG-11-5'	SG-18-5'	SG-16-5'
Date :			12/1/97	12/1/97	12/1/97	12/1/97	12/1/97	12/1/97	12/1/97	12/1/97	12/1/97	12/1/97
Time Collected :			10:35	10:35	11:05	11:23	11:42	13:06	13:22	13:41	14:05	14:20
Time Analyzed :			10:38	10:53	11:07	11:25	11:44	13:09	13:25	13:42	14:06	14:22
Run #:			013	014	015	016	017	018	019	020	021	022
Volume Analyzed (ECD1/ECD2/PID, µL) :			50/10/500	50/10/500	50/10/500	50/10/500	50/10/200	50/10/500	50/10/500	50/10/500	50/10/500	50/10/500
Second Injection Volume												
Compound Name	***Detector***	***RT (min)***	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
trichlorofluoromethane (F-11)	ECD1	1.74	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
methylene chloride (CH_2Cl_2)	ECD1	2.28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane (11-DCA)	ECD1	2.69	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
chloroform ($CHCl_3$)	ECD1	3.28	<0.01	<0.01	<0.01	<0.01	**0.053**	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,1-trichloroethane (111-TCA)	ECD1	3.44	**0.044**	**0.043**	**0.013**	<0.01	**0.26**	**0.18**	<0.01	**0.036**	**0.017**	**0.046**
carbon tetrachloride (CCl_4)	ECD1	3.58	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-dichloroethane (12-DCA)	ECD1	3.72	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
trichloroethene (TCE)	ECD1	4.23	**1.5**	**1.6**	<0.01	<0.01	**13**	**7.9**	<0.01	**0.47**	**0.074**	**0.96**
1,1,2-trichloroethane (112-TCA)	ECD1	5.79	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
tetrachloroethene (PCE)	ECD1	5.98	**1.6**	**1.7**	**0.061**	**0.075**	NU	**5.0**	<0.01	**0.94**	**0.13**	**1.0**
1,1,1,2-tetrachloroethane (1112-TCA)	ECD1	6.99	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane (1122-TCA)	ECD1	9.34	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
dichlorodifluoromethane (F-12)	ECD2	2 06	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-trichlorotrifluoroethane (F-113)	ECD2	3.65	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
vinyl chloride	PID	1.42	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
chloroethane	PID	1.79	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethene (11-DCE)	PID	2.33	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-dichloroethene (t-12-DCE)	PID	2.77	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-dichloroethene (c-12-DCE)	PID	3.22	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
benzene	PID	4.10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
trichloroethene (TCE)	PID	4.63	NU	NU	NU	NU	NU	NU	NU	NU	NU	NU
toluene	PID	5.75	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
tetrachloroethene (PCE)	PID	6.52	NU	NU	NU	NU	**28**	NU	NU	NU	NU	NU
ethylbenzene	PID	7.27	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
m/p-xylenes	PID	7.40	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
o-xylene	PID	7 78	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
% Surrogate 1 Recovery	PID	4.217	117	122	108	117	117	114	110	116	116	107
% Surrogate 2 Recovery	ECD	4.542	88	85	109	95	92	116	109	114	117	105
% Surrogate 3 Recovery	ECD	6 25	112	102	122	103	MI	91	104	110	122	113

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Summary of Analytical Results

Lab ID: Phase 3

Project #: 97119
Client: Erler & Kalinowski

Site: 5030 Firestone Blvd.
Southgate, California

Sample ID :			SG-15-5'	SG-9-5'	SG-22-5'	SG-21-5'	SG-17-5'	SG-14-5'	SG-19-5'	SG-20-5'	System / Syringe Blank
Date :			12/1/97	12/1/97	12/1/97	12/1/97	12/1/97	12/1/97	12/1/97	12/1/97	12/2/97
Time Collected :			14:37	14:55	15:14	15:43	16:02	16:18	16:35	16:52	NA
Time Analyzed :			14:38	14:56	15:16	15:45	16:04	16:19	16:36	16:54	7:07
Run #:			023	024	025	026	027	028	029	030	031
Volume Analyzed (ECD1/ECD2/PID, µL) :			50/10/500	50/10/500	50/10/500	50/10/500	50/10/500	50/10/500	50/10/500	50/10/500	300/200/500
Second Injection Volume											
Compound Name	***Detector***	***RT (min)***	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
trichlorofluoromethane (F-11)	ECD1	1.74	<0.01	<0.01	**0.010**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
methylene chloride (CH_2Cl_2)	ECD1	2.28	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane (11-DCA)	ECD1	2.69	<1	<1	<1	<1	<1	<1	<1	<1	<1
chloroform ($CHCl_3$)	ECD1	3.28	<0.01	**0.056**	**0.040**	<0.01	<0.01	**0.038**	<0.01	<0.01	<0.01
1,1,1-trichloroethane (111-TCA)	ECD1	3.44	**0.20**	**0.71**	**0.89**	**0.34**	**0.20**	**0.50**	<0.01	**0.082**	<0.01
carbon tetrachloride (CCl_4)	ECD1	3.58	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0 01
1,2-dichloroethane (12-DCA)	ECD1	3.72	<1	<1	<1	<1	<1	<1	<1	<1	<1
trichloroethene (TCE)	ECD1	4.23	**4.7**	**11**	**11**	**2.5**	**2.2**	**8.0**	<0.01	**0.14**	<0.01
1,1,2-trichloroethane (112-TCA)	ECD1	5.79	<1	<1	<1	<1	<1	<1	<1	<1	<1
tetrachloroethene (PCE)	ECD1	5.98	**5.9**	NU	NU	**3.7**	**4.2**	NU	**0.12**	**0.74**	<0.01
1,1,1,2-tetrachloroethane (1112-TCA)	ECD1	6.99	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane (1122-TCA)	ECD1	9.34	<1	<1	<1	<1	<1	<1	<1	<1	<1
dichlorodifluoromethane (F-12)	ECD2	2.06	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
1,1,2-trichlorotrifluoroethane (F-113)	ECD2	3.65	<1	<1	<1	<1	<1	<1	<1	<1	<0.1
vinyl chloride	PID	1.42	<1	<1	<1	<1	<1	<1	<1	<1	<1
chloroethane	PID	1.79	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethene (11-DCE)	PID	2.33	<1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-dichloroethene (t-12-DCE)	PID	2.77	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-dichloroethene (c-12-DCE)	PID	3.22	<1	<1	<1	<1	<1	<1	<1	<1	<1
benzene	PID	4.10	<1	<1	<1	<1	<1	<1	<1	<1	<1
trichloroethene (TCE)	PID	4.63	NU	NU	NU	NU	NU	NU	NU	NU	<1
toluene	PID	5.75	<1	<1	<1	<1	<1	<1	<1	<1	<1
tetrachloroethene (PCE)	PID	6.52	NU	**25**	**25**	NU	NU	**28**	NU	NU	<1
ethylbenzene	PID	7.27	<1	<1	<1	<1	<1	<1	<1	<1	<1
m/p-xylenes	PID	7.40	<1	<1	<1	<1	<1	<1	<1	<1	<1
o-xylene	PID	7.78	<1	<1	<1	<1	<1	<1	<1	<1	<1
% Surrogate 1 Recovery	PID	4.217	120	113	114	114	118	114	117	120	NA
% Surrogate 2 Recovery	ECD	4.542	99	116	110	95	100	92	112	93	NA
% Surrogate 3 Recovery	ECD	6.25	91	MI	MI	113	113	MI	120	84	NA

NA Not Applicable or Not Available MI Matrix Interference NU Not Used

Summary of Analytical Results

Lab ID: Phase 3

Project #: 97119
Client: Erler & Kalinowski

Site: 5030 Firestone Blvd.
Southgate, California

Sample ID :			Ambient Air	SG-26-5'	SG-25-5'	duplicate SG-25-5'	SG-27-5'	SG-32-5'	SG-28-5'	SG-30-3'	SG-24-5'	duplicate SG-24-5'
Date :			12/2/97	12/2/97	12/2/97	12/2/97	12/2/97	12/2/97	12/2/97	12/2/97	12/2/97	12/2/97
Time Collected :			NA	8:21	8:38	8:38	9:05	9:24	9:38	10:06	10:24	10:24
Time Analyzed :			8:09	8:23	8:40	8:52	9:08	9:26	9:39	10:07	10:26	10:39
Run #:			035	036	037	038	039	040	041	042	043	044
Volume Analyzed (ECD1/ECD2/PID, µL) :			300/100/500	50/10/500	50/10/500	50/10/500	50/10/500	50/10/500	50/10/500	50/10/500	50/10/500	50/10/500
Second Injection Volume												
Compound Name	***Detector***	***RT (min)***	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
trichlorofluoromethane (F-11)	ECD1	1.74	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
methylene chloride (CH_2Cl_2)	ECD1	2.28	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane (11-DCA)	ECD1	2.69	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
chloroform ($CHCl_3$)	ECD1	3.28	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,1-trichloroethane (111-TCA)	ECD1	3.44	<0.01	**0.12**	**0.12**	**0.13**	**0.048**	<0.01	<0.01	<0.01	**0.084**	**0.080**
carbon tetrachloride (CCl_4)	ECD1	3.58	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-dichloroethane (12-DCA)	ECD1	3.72	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
trichloroethene (TCE)	ECD1	4.23	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.13**	**0.33**	**0.34**
1,1,2-trichloroethane (112-TCA)	ECD1	5.79	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
tetrachloroethene (PCE)	ECD1	5.98	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.028**	**0.57**	**0.68**
1,1,1,2-tetrachloroethane (1112-TCA)	ECD1	6.99	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane (1122-TCA)	ECD1	9.34	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
dichlorodifluoromethane (F-12)	ECD2	2.06	<0.1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-trichlorotrifluoroethane (F-113)	ECD2	3.65	<0.1	<1	<1	<1	<1	<1	<1	<1	<1	<1
vinyl chloride	PID	1.42	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
chloroethane	PID	1.79	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethene (11-DCE)	PID	2.33	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-dichloroethene (t-12-DCE)	PID	2.77	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-dichloroethene (c-12-DCE)	PID	3.22	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
benzene	PID	4.10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
trichloroethene (TCE)	PID	4.63	<1	NU	NU	NU	NU	NU	NU	NU	NU	NU
toluene	PID	5.75	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
tetrachloroethene (PCE)	PID	6.52	<1	NU	NU	NU	NU	NU	NU	NU	NU	NU
ethylbenzene	PID	7 27	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
m/p-xylenes	PID	7.40	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
o-xylene	PID	7 78	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
% Surrogate 1 Recovery	PID	4 217	97	115	120	125	114	109	114	110	112	124
% Surrogate 2 Recovery	ECD	4 542	97	118	97	91	110	112	113	112	107	108
% Surrogate 3 Recovery	ECD	6.25	90	98	107	83	106	112	117	87	118	110

NA Not Applicable or Not Available MI Matrix Interference NU Not Used

Summary of Analytical Results

Lab ID: Phase 3

Project #: 97119
Client: Erler & Kalinowski

Site: 5030 Firestone Blvd.
Southgate, California

Sample ID :			SG-23-5'	SG-31-3'	SG-33-5'	SG-34-5'	SG-35-5'	SG-36-5'	SG-37-5'	SG-29-2'
Date :			12/2/97	12/2/97	12/2/97	12/2/97	12/2/97	12/2/97	12/2/97	12/2/97
Time Collected :			10:45	11:25	12:28	12:45	13:01	13:15	13:35	13:50
Time Analyzed :			10:53	11:29	12:30	12:47	13:03	13:20	13:37	13:51
Run #:			045	046	047	048	049	050	051	052
Volume Analyzed (ECD1/ECD2/PID, µL) :			50/10/500	50/10/500	50/10/500	50/10/500	50/10/500	50/10/500	50/10/500	50/10/500
Second Injection Volume										
Compound Name	***Detector***	***RT (min)***	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
trichlorofluoromethane (F-11)	ECD1	1.74	<0.01	<0.01	**0.032**	<0.01	<0.01	<0.01	<0.01	<0.01
methylene chloride (CH_2Cl_2)	ECD1	2.28	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane (11-DCA)	ECD1	2.69	<1	<1	<1	<1	<1	<1	<1	<1
chloroform ($CHCl_3$)	ECD1	3.28	<0.01	<0.01	<0.01	<0.01	<0.01	**0.058**	<0.01	<0.01
1,1,1-trichloroethane (111-TCA)	ECD1	3.44	**0.13**	<0.01	**0.18**	**0.26**	**0.12**	**0.24**	**0.18**	**0.020**
carbon tetrachloride (CCl_4)	ECD1	3.58	<0.01	<0 01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-dichloroethane (12-DCA)	ECD1	3.72	<1	<1	<1	<1	<1	<1	<1	<1
trichloroethene (TCE)	ECD1	4.23	**1.2**	<0.01	**0.41**	**2.4**	**3.6**	**25**	**12**	**0.020**
1,1,2-trichloroethane (112-TCA)	ECD1	5 79	<1	<1	<1	<1	<1	<1	<1	<1
tetrachloroethene (PCE)	ECD1	5 98	**1.3**	**0.021**	**3.2**	**6.3**	**1.9**	**3.0**	**2.0**	**0.036**
1,1,1,2-tetrachloroethane (1112-TCA)	ECD1	6.99	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane (1122-TCA)	ECD1	9.34	<1	<1	<1	<1	<1	<1	<1	<1
dichlorodifluoromethane (F-12)	ECD2	2.06	<1	<1	**1.2**	<1	<1	<1	<1	<1
1,1,2-trichlorotrifluoroethane (F-113)	ECD2	3.65	<1	<1	<1	<1	<1	<1	<1	<1
vinyl chloride	PID	1.42	<1	<1	<1	<1	<1	<1	<1	<1
chloroethane	PID	1.79	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethene (11-DCE)	PID	2.33	<1	<1	<1	<1	<1	<1	<1	<1
trans-1,2-dichloroethene (t-12-DCE)	PID	2.77	<1	<1	<1	<1	<1	<1	<1	<1
cis-1,2-dichloroethene (c-12-DCE)	PID	3.22	<1	<1	<1	<1	<1	<1	<1	<1
benzene	PID	4.10	<1	<1	<1	<1	<1	<1	<1	<1
trichloroethene (TCE)	PID	4.63	NU	NU	NU	NU	NU	NU	NU	NU
toluene	PID	5.75	<1	<1	<1	<1	<1	<1	<1	<1
tetrachloroethene (PCE)	PID	6.52	NU	NU	NU	NU	NU	NU	NU	NU
ethylbenzene	PID	7 27	<1	<1	<1	<1	<1	<1	<1	<1
m/p-xylenes	PID	7.40	<1	<1	<1	<1	<1	<1	<1	<1
o-xylene	PID	7.78	<1	<1	<1	<1	<1	<1	<1	<1
% Surrogate 1 Recovery	PID	4.217	112	117	104	121	106	109	113	117
% Surrogate 2 Recovery	ECD	4 542	82	72	81	88	92	90	110	105
% Surrogate 3 Recovery	ECD	6 25	96	103	104	86	87	99	110	114

110

Appendix B:

Quality Control Summary

QUALITY CONTROL SUMMARY

Date : December 1, 1997
Project # : 97119
Chemist : JCT
Machine ID: Phase 3

				MID-POINT CALIBRATION CHECK					
				Calibration Information and Detector Response					
ANALYTE	DETECTOR	COLUMN TYPE/SERIAL #	STDconc (µg/L)	µL	area	rf	mean rf	% Dif	ACC RGE
F-11	ECD	DB-624/1213537	0.05	100	4528090	1.10E-06	1.14E-06	3%	25%
CH_2Cl_2	ECD	DB-624/1213537	26.1	100	2185047	1.19E-03	1.38E-03	13%	15%
1,1-DCA	ECD	DB-624/1213537	30.9	100	1941130	1.59E-03	1.65E-03	4%	15%
$CHCl_3$	ECD	DB-624/1213537	0.699	100	1231139	5.68E-05	5.05E-05	12%	15%
1,1,1-TCA	ECD	DB-624/1213537	0.076	100	1541568	4.93E-06	4.73E-06	4%	15%
CCl_4	ECD	DB-624/1213537	0.0315	100	4393803	7.17E-07	6.52E-07	10%	15%
1,2-DCA	ECD	DB-624/1213537	25.8	100	2287637	1.13E-03	1.17E-03	4%	15%
TCE	ECD	DB-624/1213537	0.447	100	1194218	3.74E-05	4.25E-05	12%	15%
CH_2Br_2 (s)	ECD	DB-624/1213537	0.118	100	1325054	8.91E-06	9.03E-06	1%	25%
1,1,2-TCA	ECD	DB-624/1213537	5.6	100	2052615	2.73E-04	2.71E-04	1%	15%
PCE	ECD	DB-624/1213537	0.123	100	1723055	7.14E-06	7.67E-06	7%	15%
$CHBr_2Cl$ (s)	ECD	DB-624/1213537	0.122	100	1336995	9.12E-06	8.28E-06	10%	25%
1,1,1,2-TCA	ECD	DB-624/1213537	0.0593	100	1057253	5.61E-06	5.70E-06	2%	15%
1,1,2,2-TCA	ECD	DB-624/1213537	6.2	20	213598	5.81E-04	6.74E-04	14%	15%
F-12	ECD	DB-1/4326342	0.49	100	5329340	9.19E-06	1.08E-05	15%	25%
F-113	ECD	DB-1/4326342	0.7	50	9428092	3.71E-06	4.67E-06	21%	25%
vinyl chloride	PID	DB-1/1251035	25	100	1831709	1.36E-03	1.48E-03	8%	25%
chloroethane	PID	DB-1/1251035	102	100	3899445	2.62E-03	2.78E-03	6%	25%
1,1-DCE	PID	DB-1/1251035	39.4	100	4307228	9.15E-04	9.07E-04	1%	15%
t-1,2-DCE	PID	DB-1/1251035	20	100	4970188	4.02E-04	4.13E-04	3%	15%
c-1,2-DCE	PID	DB-1/1251035	30	100	3674523	8.16E-04	9.00E-04	9%	15%
benzene	PID	DB-1/1251035	21.4	100	5243869	4.08E-04	4.39E-04	7%	15%
fluorobenzene (s)	PID	DB-1/1251035	24.2	100	4380092	5.52E-04	5.83E-04	5%	25%
TCE	PID	DB-1/1251035	29.9	100	3811540	7.84E-04	7.69E-04	2%	15%
toluene	PID	DB-1/1251035	18.8	100	4132068	4.55E-04	4.88E-04	7%	15%
PCE	PID	DB-1/1251035	46.2	100	3784128	1.22E-03	1.13E-03	8%	15%
ethylbenzene	PID	DB-1/1251035	22.2	100	3497458	6.35E-04	6.64E-04	4%	15%
m,p-xylenes	PID	DB-1/1251035	22.2	100	4509693	4.92E-04	5.04E-04	2%	15%
o-xylene	PID	DB-1/1251035	22.4	100	3337132	6.71E-04	5.97E-04	12%	15%

rf: response factor
µg/L: micrograms per liter
µL: standard volume in microliters

rf = STDconc * µL / Area
STDconc : standard concentration
ACC RGE: acceptable range of % difference

QUALITY CONTROL SUMMARY

Date : December 2, 1997
Project # : 97119
Chemist : JCT
Machine ID: Phase 3

				MID-POINT CALIBRATION CHECK					
				Calibration Information and Detector Response					
ANALYTE	DETECTOR	COLUMN TYPE/SERIAL #	STDconc (µg/L)	µL	area	rf	mean rf	% Dif	ACC RGE
F-11	ECD	DB-624/1213537	0.05	100	4645106	1.08E-06	1.14E-06	6%	25%
CH_2Cl_2	ECD	DB-624/1213537	26.1	100	1938181	1.35E-03	1.38E-03	2%	15%
1,1-DCA	ECD	DB-624/1213537	30.9	100	2075261	1.49E-03	1.65E-03	10%	15%
$CHCl_3$	ECD	DB-624/1213537	0.699	100	1306719	5.35E-05	5.05E-05	6%	15%
1,1,1-TCA	ECD	DB-624/1213537	0.076	100	1487775	5.11E-06	4.73E-06	8%	15%
CCl_4	ECD	DB-624/1213537	0.0315	100	5395598	5.84E-07	6.52E-07	10%	15%
1,2-DCA	ECD	DB-624/1213537	25.8	100	2551244	1.01E-03	1.17E-03	14%	15%
TCE	ECD	DB-624/1213537	0.447	100	1205640	3.71E-05	4.25E-05	13%	15%
CH_2Br_2 (s)	ECD	DB-624/1213537	0.118	100	1236819	9.54E-06	9.03E-06	6%	25%
1,1,2-TCA	ECD	DB-624/1213537	5.6	100	2266172	2.47E-04	2.71E-04	9%	15%
PCE	ECD	DB-624/1213537	0.123	100	1782327	6.90E-06	7.67E-06	10%	15%
$CHBr_2Cl$ (s)	ECD	DB-624/1213537	0.122	100	1880328	6.49E-06	8.28E-06	22%	25%
1,1,1,2-TCA	ECD	DB-624/1213537	0.0593	100	1080370	5.49E-06	5.70E-06	4%	15%
1,1,2,2-TCA	ECD	DB-624/1213537	6.2	50	398279	7.78E-04	6.74E-04	15%	15%
F-12	ECD	DB-1/4326342	0.49	150	7468526	9.84E-06	1.08E-05	9%	25%
F-113	ECD	DB-1/4326342	0.7	30	4810667	4.37E-06	4.67E-06	7%	25%
vinyl chloride	PID	DB-1/1251035	25	100	1717682	1.46E-03	1.48E-03	2%	25%
chloroethane	PID	DB-1/1251035	102	100	3591743	2.84E-03	2.78E-03	2%	25%
1,1-DCE	PID	DB-1/1251035	39.4	100	4356725	9.04E-04	9.07E-04	0%	15%
t-1,2-DCE	PID	DB-1/1251035	20	100	4873631	4.10E-04	4.13E-04	1%	15%
c-1,2-DCE	PID	DB-1/1251035	30	100	3678915	8.15E-04	9.00E-04	9%	15%
benzene	PID	DB-1/1251035	21.4	100	5203032	4.11E-04	4.39E-04	6%	15%
fluorobenzene (s)	PID	DB-1/1251035	24.2	100	4206616	5.75E-04	5.83E-04	1%	25%
TCE	PID	DB-1/1251035	29.9	100	3945010	7.58E-04	7.69E-04	1%	15%
toluene	PID	DB-1/1251035	18.8	100	4278428	4.39E-04	4.88E-04	10%	15%
PCE	PID	DB-1/1251035	46.2	100	4063022	1.14E-03	1.13E-03	1%	15%
ethylbenzene	PID	DB-1/1251035	22.2	100	3566837	6.22E-04	6.64E-04	6%	15%
m,p-xylenes	PID	DB-1/1251035	22.2	100	4299982	5.16E-04	5.04E-04	2%	15%
o-xylene	PID	DB-1/1251035	22.4	100	3455331	6.48E-04	5.97E-04	9%	15%

rf: response factor
µg/L: micrograms per liter
µL: standard volume in microliters

rf = STDconc * µL / Area
STDconc standard concentration
ACC RGE: acceptable range of % difference

Appendix C:

Field Logbooks

INTERPHASE

ENVIRONMENTAL CHEMISTRY SPECIALISTS

6200 PEACHTREE STREET

LOS ANGELES, CA 90040

213•278•7700 800•457•3300

FAX 213•278•7707

InterPhase Project Logbook

Project No.:	97119
Client:	ERLER & KALINOWSKI
Site Name:	JERVIS B. WEBB CO.
Location:	9301 RAYO SOUTH GATE, CA
Dates Worked:	12-1-97 → 12/2

Logbook # 1 of 1

Project Summary

Total Number of Soil Gas Samples Collected	37 + 2 F.V.T. + 3 dup
Total Number of Soil Samples Collected	Ø
Total Number of Groundwater Samples Collected	Ø

List of Materials Lost or Damaged on Project

Ø

Expendable Materials Used on Project:

Expendable Drive Points (#): 43	Poly tubing (ft): 185'
Bentonite (# bags): 3	Cement/Asphalt Patch (# bags): 1 cement ½ Asphalt
Other Expendables: Ø	Rental Equipement: Ø

Notes of Interest

1 Suma for TO-14

Project Background Information

Project No.: 97119	Phase No.: 3
Site Name: JERVIS B. WEBB CO.	Location: SOUTHGATE, CA
Dates Worked: 12-1-97 →	
Client Name and Address: EPLER & KALINOWSKI 2951 28TH STREET, SUITE 1020 SANTA MONICA, CA 90405	Client Field Representative(s) Name(s): ROB
Client Telephone: 310-314-8855	Client FAX:
Crew	
Chemist: TANGEMAN	Technician: FAVERO

Additional information to be included with data report at Client's request:

Purpose of Investigation:
to determine if there are any off-site sources

Target VOCs:

WIP

Groundwater Information (if available):

Depth to Groundwater: ~ 40'-50' Direction of Flow:

Possible/Known Source(s) of Contamination (if available):
— RIVET MANUFACTURER. CLARIFIER

Subsurface Conditions (Soil Type, Subsurface Geology, etc.)

If maps are required, draw to scale and include: Project Number, Client, Site Name and Location, Scale (both bar and inch equivalent), North Arrow (approximate), Sampling Locations and Numbers.
If maps are supplied by client, check for accuracy and clarity and enclose.

Daily Summary

Date: 12-1-97	Project No.: 97119
Client: ERLER	
Weather: SUNNY HIGH 65° LOW 50°	

Field Hours

Time on Site: 0700	Lunch Hours: 1 Hour
Time off Site: 1715.	Downtime Hours: 0
	Standby Hours: 0

Calibration

Start Calibration:	0700	
Stop Calibration:	0800	
Total Calibration Hours:	1	

Sample Summary

Total Syringe/System Blanks: 1	Total Ambient Air Blanks: 1
Total Soil Gas Samples: >2 + PURGE	Total Soil Samples: 0
Total Groundwater Samples: 0	Other (specify): 0

Backfill Procedures Used: — BENTONITE	Decon Procedures Used: — DISCARD TUBING & BACK PT. HOLDER

Expendables

Expendable Drive Tips Used: 23	Poly Tubing (ft.) Used: 100'
Bentonite Used (# bags): 2 BAGS	Cement Used (# bags): 0
Asphalt Used (# bags): 1/4	

List Equipment Lost or Damaged — NONE
Rental Equipment Used: — NONE

Notes

Date: 12-1-97	Client: EPLER	Project No.: 97119

Time:	Event / Notes:

* 8 purge volumes is the optimal purge volume

Sampling Log

Date: 12-1-97					Project No.: 97119
Client: ERLER					Location: SOUTHGATE
Time	Sample ID	Depth (ft)	SG Purge Volume (cc)	Sample Type	Note and Observations
811	SG-8A	5'	60	SG	
831	SG-8B	5'	120	SG	
* 844	SG-8C	5'	240	SG	
0912	SG-1	5'	240	SG	NEXT TO CLARIFIER
0935	SG-2	5'	240	SG	
0957	SG-3	5'	240	SG	
1015	SG-4	5'	240	SG	
1035	SG-5	5'	240	SG	DUPLICATE
1105	SG-6	5'	240	SG	
1123	SG-7	5'	240	SG	
1142	SG-16	5'	240	SG	INSIDE BLDG.
12:05	—1300	Lunch			
1306	SG-13	5'	240	SG	" "
1322	SG-12	5'	240	SG	" "
1341	SG-11	5'	240	SG	HAND PUMPED
1405	SG-18	5'	240	SG	
1420	SG-16	5'	240	SG	
1437	SG-15	5'	240	SG	
1455	SG-9	5'	240	SG	
1514	SG-22	5'	240	SG	
1543	SG-21	5'	240	SG	LOST POINT & FILLED HOLE W/DIRT. WENT BACK DOWN HOLE

Sampling Log

Date: 12-1-97 | Project No.: 97119

Time	Sample ID	Depth (ft)	SG Purge Volume (cc)	Sample Type	Note and Observations
1602	SG-17	5'	240	SG	
1618	SG-14	5'	240	SG	
1635	SG-19	5'	240	SG	
1652	SG-20	5'	240	SG	
1715	DEPART 5.75				

Daily Summary

Date: 12-2-97	Project No.: 97119
Client: EREER	
Weather:	

Field Hours

Time on Site:	0700	Lunch Hours:	40 MINUTES
Time off Site:	1430	Downtime Hours:	0
		Standby Hours:	0

Calibration

Start Calibration:	0700	
Stop Calibration:	0800	
Total Calibration Hours:	1.0	

Sample Summary

Total Syringe/System Blanks:	1	Total Ambient Air Blanks:	1
Total Soil Gas Samples:	15	Total Soil Samples:	0
Total Groundwater Samples:	0	Other (specify):	6

Backfill Procedures Used: — BENTONITE	Decon Procedures Used: — DISCARD TUBING — BAKE

Expendables

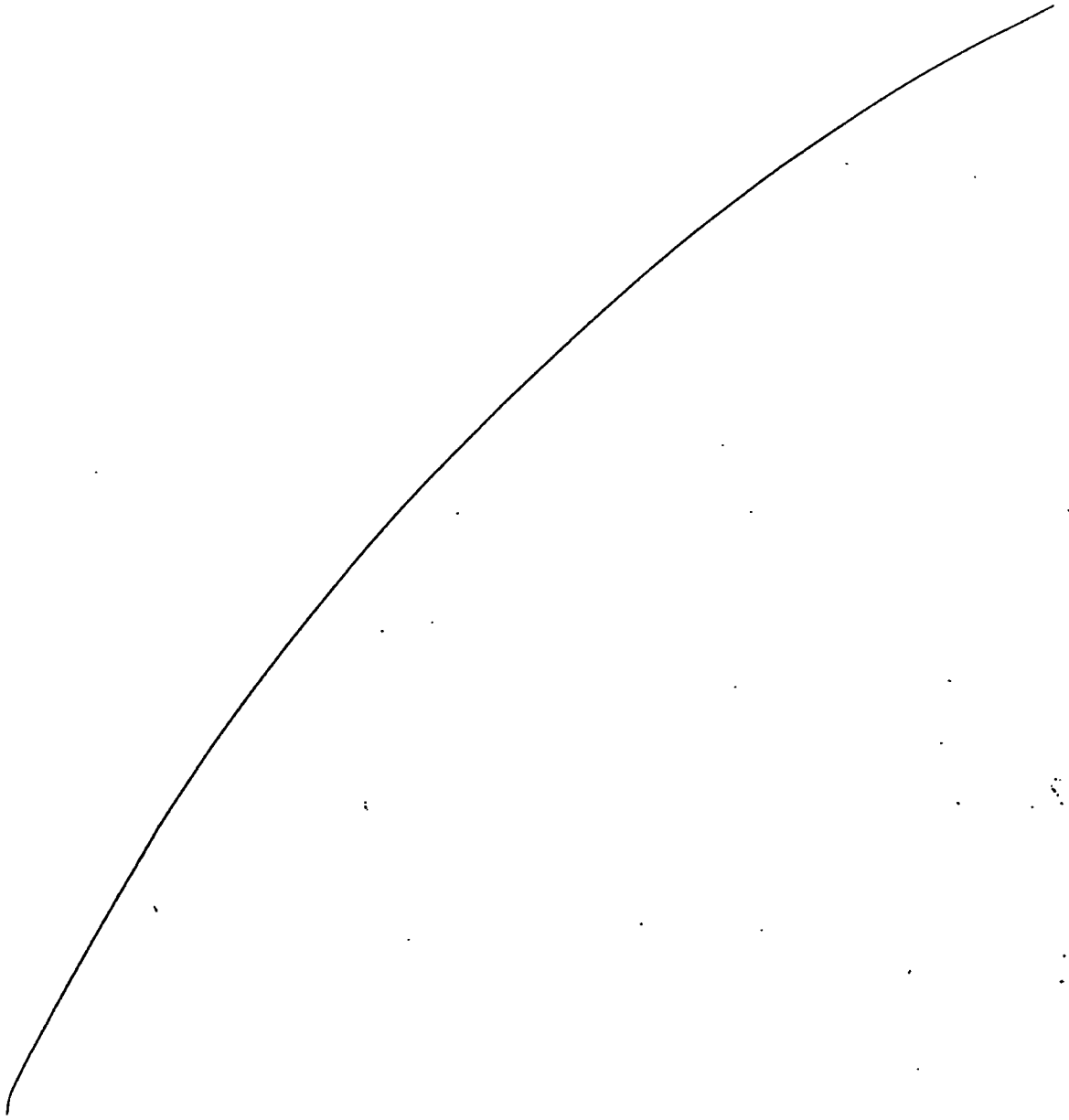
Expendable Drive Tips Used:	20	Poly Tubing (ft.) Used:	85
Bentonite Used (# bags):	1	Cement Used (# bags):	1
Asphalt Used (# bags):	1/4		

List Equipment Lost or Damaged NONE
Rental Equipment Used: NONE

Notes

Date: 12-2-97	Client: Ercs	Project No.: 97119

Time:	Event / Notes:



Sampling Log

Date: 12-2-97 | Project No.: 97119
Client: ERLER | Location: SOUTHGATE

Time	Sample ID	Depth (ft)	SG Purge Volume (cc)	Sample Type	Note and Observations
0821	SG-26	5'	240	SG	IN GRASS
0838	SG-25	5'	240	SG	" " duplicate. HAND POUNDED
0905	SG-27	5'	240	SG	ASPHALT
0924	SG-32	5'	240	SG	"
0938	SG-28	5'	240	SG	"
0954	SG-29	— NO SAMPLE —			REFUSAL AT 2'. TRIED 3 TIMES.
1006	SG-30	3'	160	SG	REFUSAL AT 3'
1024	SG-24	5'	240	SG	duplicate
1045	SG-23	5'	240	SG	REFUSAL AT 1'. NOISE ~1 FT AWAY. SUMMA CANISTER I.D.: 791
1125	SG-31	3'	160	SG	ASPHALT
1140-1220	— LUNCH				
1228	SG-33	5'	240	SG	ASPHALT
1245	SG-34	5'	240	SG	"
1301	SG-35	5'	240	SG	DIRT
1319	SG-36	5'	240	SG	ASPHALT
1335	SG-37	5'	240	SG	"
1350	SG-29	2'	120	SG	" REFUSAL AT 2'.
~~0~~ 1430	DEPART	SITE			

SUMMA

Sampling Log

Date:					Project No.:
Time	Sample ID	Depth (ft)	SG Purge Volume (cc)	Sample Type	Note and Observations

Appendix D:

Analyte Confirmation
Sample Results

ENVIRONMENTAL
Analytical Service, Inc

December 16, 1997
Sample Delivery Group (SDG): 70551

Scott Norris
InterPhase Environmental
6200 Peachtree Street
Los Angeles, CA 90040

Dear Scott:

Enclosed is the analytical report for the samples received and analyzed by Environmental Analytical Service, Inc. for the following project:

Project Name: Jervis B. Webb
Project Number: 97119

The report consists of the following sections:

I. Sample Description
II. Laboratory Narrative and Chain of Custody Forms
III. Laboratory Certification
IV. Quality Control Reports
V. Analytical Results

If you have any questions on the report or the analytical data please contact me at (805) 781-3585.

Sincerely,

Steven D. Hoyt, Ph.D.
Laboratory Director

SDH/lims

3421 Empresa, Suite A
San Luis Obispo, CA
93401
805 781.3585
Fax 805 541.4550

Analytical Report

SDG Number 70551

Client: InterPhase Environmental **Date Received:** 12/3/97

I. SAMPLE DESCRIPTION AND ANALYSIS REQUESTED

Client Sample No.	EAS Lab No.	Analysis Requested	Date Sampled	Pressure (torr) Rec	Final
SG-23-5'	70551 1	EPA TO-14 Volatile Organics	12/2/97	722	904

II. LABORATORY CASE NARRATIVE and CHAIN OF CUSTODY FORMS

SDG Number: 70551
Analysis performed for: InterPhase Environmental

All laboratory quality control criteria were met for the samples in this report except chlorobenzene exceeds the QC limits for the duplicate spike analysis.

III. LABORATORY CERTIFICATION

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the condition noted above.

Steven D. Hoyt, Ph.D.
Laboratory Director

ENVIRONMENTAL
Analytical Service, Inc.

3421 Empresa, Suite A
San Luis Obispo, CA
93401
805.781.3585
Fax 805.541.4550

CHAIN OF CUSTODY RECORD

Project Number: 97119 | Project Name: JERVIS B. WEBB | Quote Number

REPORT TO:

Company: INTERPHASE
Address: 6200 PEACHTREE ST.
City/State/Zip: LOS ANGELES, CA 90040
Phone: 213-278-7700 FAX 213-278-7707
ATTENTION: SCOTT NORRIS

MATRIX LEGEND
W - Water
SL - Soil
S - Source Air, High Level
A - Ambient Air, Low Level

SAMPLE DESCRIPTION	SAMPLE DATE	SAMPLE TIME	COMP	GRAB	ACID	BASE	MATRIX W	MATRIX SL	MATRIX S	MATRIX A	CONTAINER/CANISTER NUMBER	INITIAL PRESSURE	EAS LABORATORY ID	ANALYTICAL TESTS: TO-14	REMARKS
SG-23-5'	12-2-97	1045							S	X	791	722/904	70551	X	

COMMENTS: SITE EW

BILLING INFORMATION:

Company: INTERPHASE
Address: 6200 PEACHTREE ST.
City/State/Zip: LOS ANGELES, CA 90040
ATTENTION: MARTIN FAVERO
Purchase Order/Billing Reference:

	Date	Time		Date	Time
SAMPLED BY: M. Favero	12-2-97	10:45	Received by:	12/2	3:15
Relinquished by:	12/2		Received by:		
Relinquished by:			Received by:		
Relinquished by:			Received for lab by:	12/3	11:00

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IV. QUALITY CONTROL REPORT

SDG Number: 70551
Client: InterPhase Environmental

LABORATORY QC REPORT

QC NARRATIVE

This report was run with the standard laboratory QC.

STANDARD LABORATORY QC REPORT

Unless project specific QC was requested, this Section contains the standard laboratory QC supplied with the analytical reports, which includes the daily method blank and the daily duplicate control samples as described below. Each day that samples are analyzed comprises a Daily Analytical Batch for a particular instrument. A Daily Analytical Batch QC report will be supplied for each method and each day samples from this SDG Group were analyzed.

METHOD BLANK

A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples. A copy of the batch blank is included with the report.

DUPLICATE CONTROL SAMPLES

A duplicate or duplicate control sample (DCS) was analyzed as part of each daily analytical batch. A DCS is a well-characterized matrix (blank water, ambient air, or actual sample) which may or may not be spiked and run in duplicate with your sample batch. The results are on the attached Duplicate Sample/Spike results. Precision is measured in a duplicate test by Relative
Percent Difference (RPD) as in:

$$RPD = \frac{[\%\ \text{Recovery Test 1} - \%\ \text{Recovery Test 2}] \times 100}{(\text{Recovery Test 1} + \text{Recovery Test 2}) / 2}$$

ENVIRONMENTAL
Analytical Service, Inc.

METHOD BLANK REPORT

EPA TO-14 Full Scan GC/MS — Laboratory Number: B12157

File: CC172A D — Date Sampled: NA

Client: NA — Date Analyzed: 12/15/97

Description: CAN CHECK CAN# 172 500 ML + 2 ML IS

Analyst: LR

Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3*
Freon 12	0.1	ND		ND
chloromethane	0.1	ND		ND
freon 114	0 1	ND		ND
vinyl chloride	0 1	ND		ND
bromomethane	0 1	ND		ND
chloroethane	0 1	ND		ND
freon 11	0 1	ND		ND
1,1-dichloroethene	0.1	ND		ND
freon 113	0.1	ND		ND
dichloromethane	0.1	ND		ND
1,1-dichloroethane	0.1	ND		ND
c-1,2-dichloroethene	0.2	ND		ND
chloroform	0.1	ND		ND
1,1,1-trichloroethane	0.1	ND		ND
1,2-dichloroethane	0.1	ND		ND
benzene	0 1	ND		ND
carbon tetrachloride	0.1	ND		ND
1,2-dichloropropane	0 1	ND		ND
trichloroethene	0 1	ND		ND
c-1,3-dichloropropene	0.1	ND		ND
t-1,3-dichloropropene	0.1	ND		ND
toluene	0.1	ND		ND
1,1,2-Trichloroethane	0 1	ND		ND
1,2-dibromoethane	0.1	ND		ND
tetrachloroethene	0.1	ND		ND
chlorobenzene	0 1	ND		ND
ethylbenzene	0.1	ND		ND
m,p-xylene	0.1	ND		ND
styrene	0 1	ND		ND
o-xylene	0 1	ND		ND
1,1,2,2-tetrachloroethane	0.1	ND		ND
4-ethyltoluene	0 1	ND		ND
1,3,5-Trimethylbenzene	0 1	ND		ND
1,2,4-trimethylbenzene	0 1	ND		ND
m-dichlorobenzene	0 1	ND		ND
benzyl chloride	0 3	ND		ND
p-dichlorobenzene	0 1	ND		ND
o-dichlorobenzene	0 1	ND		ND
1,2,4-trichlorobenzene	0 3	ND		ND
hexachlorobutadiene	0 1	ND		ND

Notes: ND = Not detected at or above the listed minimum detection limit (MDL)
Reported results are to be interpreted to two significant figures
*ug/m3 calculated assuming conditions at 60 F and 1 atm

ENVIRONMENTAL
Analytical Service, Inc.

LABORATORY CONTROL AND DUPLICATE CONTROL SPIKE REPORT

Spike: QC12157
Spike Dup.: QC12157DUP
QC Lot: 12/15/97 Method: Full Scan GC/MS

Compound	Theoretical Conc.ppbv	Spike ppbv	Spike Dup ppbv	% Recov. Spike	%Recov. Spike Dup.	%RPD	% Rec. Limits
Vinyl Chloride	0.74	0.83	0.74	112	99	12	70-130%
1,1-Dichloroethene	0.83	1.04	1.08	124	129	4	70-130%
Dichloromethane	0.78	0.84	0.88	107	113	5	70-130%
1,1-Dichloroethane	0.74	0.82	0.78	110	105	4	70-130%
Chloroform	0.78	0.91	0.89	116	114	2	70-130%
1,1,1-Trichloroethane	0.57	0.70	0.73	124	128	3	70-130%
1,2-Dichloroethane	0.90	1.02	0.95	114	105	8	70-130%
Benzene	0.91	0.99	1.00	110	110	0	70-130%
Carbon Tetrachloride	0.83	1.04	1.06	124	127	2	70-130%
Trichloroethene	0.89	0.99	1.06	111	119	7	70-130%
Toluene	1.04	1.19	1.17	115	113	2	70-130%
1,1,2-Trichloroethane	1.12	1.28	1.37	115	122	6	70-130%
Tetrachloroethene	1.21	1.55	1.56	128	129	0	70-130%
Chlorobenzene	1.32	1.69	1.80	128	136	7	70-130%
Ethylbenzene	1.10	1.27	1.40	115	127	10	70-130%
m,p-Xylene	1.37	1.51	1.63	110	118	8	70-130%
o-Xylene	1 47	1.63	1.73	111	118	6	70-130%

V. ANALYTICAL RESULTS

SDG Number: 70551
Client: InterPhase Environmental

The following pages contain the certified reports for the analytical methods and the compounds requested. The reports are in order of analytical method then EAS ID number. A brief description of the units that appear on the reports is given below:

ppbV, ppmV, Percent

Parts per billion by volume (also known as mole ratio) and other related units. This is the primary reporting unit for all volatile organic compound analysis except the hydrocarbon speciation and total hydrocarbons. This unit is independent of temperature and pressure.

$$\text{ppbV} = \frac{\text{nanomoles of compound}}{\text{moles of air}}$$

ug/m3, mg/m3

Micrograms of compound per cubic meter of air and other related units. This is the primary reporting unit for semi volatile organic compounds. It is not a primary reporting unit for volatile organic compounds because it is temperature and pressure dependent, so the result will vary depending on the conditions when the sample was collected. EAS provides the units on its analytical reports as a convenience to the client, but they should be used with caution. The following equation can be used to convert from ppbV to ug/m3.

$$\text{ug/m3} = \frac{\text{ppbV x MW compound}}{23.68}$$

23.68 is the molar volume of a gas at 60 F and 1 atm pressure

ppbC, ppmC

Parts per billion by volume as carbon (methane) and other related units. This unit is the primary reporting unit for hydrocarbon analysis, even if it does not appear on the report. This unit is used because the flame ionization detector response is proportional to the number of carbons in the compound, so an accurate concentration can be reported even if the identification of the compound is not known.

$$\text{ppbC} = \text{ppbV x number of carbons in compound}$$

ENVIRONMENTAL
Analytical Service, Inc.

ANALYTICAL REPORT

EPA TO-14 Full Scan GC/MS Laboratory Number: 70551-1

File: 7055101A.D Date Sampled: 12/2/97
Client: INTERPHASE ENVIRONMENTAL Date Analyzed 12/15/97
Description. SG-23-5' CAN# 791 20ML + 2 ML IS
Analyst: JK

Compound	MDL ppbv	Amount ppbv	Flag	Amount ug/m3*
Freon 12	3.1	ND		ND
chloromethane	3.1	ND		ND
freon 114	3.1	ND		ND
vinyl chloride	3.1	ND		ND
bromomethane	3.1	ND		ND
chloroethane	3.1	ND		ND
freon 11	3.1	ND		ND
1,1-dichloroethene	3.1	ND		ND
freon 113	3.1	ND		ND
dichloromethane	3.1	3.6		12.8
1,1-dichloroethane	3.1	ND		ND
c-1,2-dichloroethene	6.3	ND		ND
chloroform	3.1	ND		ND
1,1,1-trichloroethane	3.1	97.5		547.4
1,2-dichloroethane	3.1	ND		ND
benzene	3.1	ND		ND
carbon tetrachloride	3.1	ND		ND
1,2-dichloropropane	3.1	ND		ND
trichloroethene	3.1	313.1		1732 2
c-1,3-dichloropropene	3.1	ND		ND
t-1,3-dichloropropene	3.1	ND		ND
toluene	3.1	4.2		16.4
1,1,2-Trichloroethane	3.1	ND		ND
1,2-dibromoethane	3.1	ND		ND
tetrachloroethene	3.1	509.9		3574.7
chlorobenzene	3.1	ND		ND
ethylbenzene	3.1	ND		ND
m,p-xylene	3.1	8.0		35.6
styrene	3.1	3.9	Q	17.2
o-xylene	3.1	3.2		14.4
1,1,2,2-tetrachloroethane	3.1	ND		ND
4-ethyltoluene	3.1	ND		ND
1,3,5-Trimethylbenzene	3.1	ND		ND
1,2,4-trimethylbenzene	3.1	ND		ND
m-dichlorobenzene	3.1	ND		ND
benzyl chloride	9.4	ND		ND
p-dichlorobenzene	3.1	ND		ND
o-dichlorobenzene	3.1	ND		ND
1,2,4-trichlorobenzene	9.4	ND		ND
hexachlorobutadiene	3.1	ND		ND

Notes: ND = Not detected at or above the listed minimum detection limit (MDL)
Reported results are to be interpreted to two significant figures.
*ug/m3 calculated assuming conditions at 60 F and 1 atm

ENVIRONMENTAL
Analytical Service, Inc.

DATA QUALIFIERS AND ABBREVIATIONS

*	See case narrative
B	This compound was also detected in the blank
D	This report was calculated from a secondary dilution factor
E	Compound exceeds the calibration range and is an estimated value
J	The amount reported is an estimated value as it is below the reported MDL
F	Higher detection limit due to sample matrix
G	Higher detection limit due to limited sample size
Q	Compound ion ratio qualifiers are outside the standard acceptance criteria
R	Compound retention time (RT) is outside the acceptance criteria for the method

MDL Minimum Detection Limit - Instrument detection limit

The minimum detectable level (MDL) is the lowest concentration of a substance that can be measured with confidence. The MDL is calculated at the 99% confidence level from seven repetitive measurements on a sample whose concentration does not exceed 10 times the estimated MDL (Glasser et. al. 1981; Long and Winefordner, 1983). In generating an MDL study, a sample is prepared in the appropriate matrix with components near the estimated MDL which is about 3 times the instrument noise level. This sample is run seven consecutive times and the standard deviation (S) is calculated. The MDL is determined using the following formula:

$$MDL = 3.14 * S.$$

ND Not Detected - a reported limit

NA Not Applicable

RPD Relative Percent Difference

The relative percent difference for a pair of duplicate samples is calculated from repetitive runs on sample pairs representative of the types of samples that are analyzed. The RPD provides information on the precision or reproducibility of the actual measurement process. The RPD is calculated for a particular compound from the average using the following equation:

$$RPD(\%) = \frac{\text{Difference} * 100}{\text{Average}}$$

RSD Relative Standard Deviation

The relative standard deviation is reported as a percentage deviation at a particular concentration using the following equation:

$$RSD(\%) = \frac{S * 100}{\text{Ave.}}$$

DEFINITIONS

ppbV = $\frac{\text{\# nanomoles cmpd}}{\text{\# moles air}}$ = $\frac{\text{ppbC}}{\text{\# carbons in cmpd}}$

Compound is reported as ppb of compound by Volume

This unit is temperature independent

ug/m^3 = ppbV x $\frac{\text{MW compound}}{23.68}$

Compound is reported as ug of a compound in a m^3 of air

23.68 is the molar volume of a gas at 60° F and 1 atm pressure

MW = molecular weight

This unit is temperature dependent

ppbC = ppbV x # carbons in compound

Appendix D

Laboratory Report and Chain-of-Custody for Soil Chemical Analyses

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

Erler & Kalinowski, Inc.
ATTN: Mr. Steve Miller
2951 28th St. Suite 1020
Santa Monica, CA 90405

Client Project ID: Webb
Client Project #: 961025.02

Laboratory Reference #: EKI 9688

Sample Description: Soil,

Sampled: 10/28/97
Received: 10/28/97
Analyzed: 10/29/97
Reported: 11/04/97

pH (9045)

Laboratory Sample Number	*Client Sample Number*	*Sample Results*
97100418	B1-5.5	7.9
97100422	B4-6	8.3
97100425	B5-1	7.7
97100426	B5-6	8.0
97100427	B6-6	6.3
97100428	B7-2	7.6
97100429	B7-6	6.7
97100430	B8-2	8.6
97100431	B8-6	8.8

Orange Coast Analytical

Mark Noorani
Laboratory Director

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LABORATORY REPORT FORM

Laboratory Name: ORANGE COAST ANALYTICAL, INC.

Address: 3002 Dow Suite 532 Tustin, CA 92780

Telephone: (714) 832-0064

Laboratory Certification
(ELAP) No.: 1416 Expiration Date: 1999

Laboratory Director's Name (Print) : Mark Noorani

Client: Erler & Kalinowski, Inc.

Project No.: 961025.02

Project Name: Webb

Laboratory Reference: EKI 9688

Analytical Method: EPA 8260, Title 22 Metals 8015m for Diesel

Date Sampled: 10/28/97
Date Received: 10/28/97
Date Reported: 11/04/97

Sample Matrix: Soil

Chain of Custody Received: Yes

Laboratory Director's Signature: Mark Noorani

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ANALYTICAL TEST RESULTS

Reporting Unit: mg/kg

DATE ANALYZED			10/31/97	10/31/97	10/31/97	10/31/97	10/31/97
LAB SAMPLE I.D.				97100418	97100420	97100421	97100423
CLIENT SAMPLE I.D.				B1-5.5	B2-5.5	B3-6	B4-10.5
EXTRACTABLE FUEL HYDROCARBONS		MDL	MB				
8015M C7-C9		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C10-C11		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C12-C13		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C14-C15		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C16-C17		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C18-C19		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C20-C21		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C22-C23		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C24-C25		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C26-C27		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C28-C30		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C31-C40		0.5	<0.5	<0.5	<0.5	<0.5	<0.5

DATE ANALYZED			10/31/97	10/31/97	10/31/97	10/31/97	10/31/97
LAB SAMPLE I.D.				97100425	97100428	97100430	97100432
CLIENT SAMPLE I.D.				B5-1	B7-2	B8-2	B9-5.5
EXTRACTABLE FUEL HYDROCARBONS		MDL	MB				
8015M C7-C9		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C10-C11		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C12-C13		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C14-C15		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C16-C17		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C18-C19		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C20-C21		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C22-C23		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C24-C25		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C26-C27		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C28-C30		0.5	<0.5	<0.5	<0.5	<0.5	<0.5
8015M C31-C40		0.5	<0.5	<0.5	<0.5	<0.5	<0.5

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ANALYTICAL TEST RESULTS

Reporting Unit: mg/kg

DATE ANALYZED			10/31/97	10/31/97	10/31/97
LAB SAMPLE I.D.				97100433	97100434
CLIENT SAMPLE I.D.				B10-6	B11-6
EXTRACTABLE FUEL HYDROCARBONS		MDL	MB		
8015M C7-C9		0.5	<0.5	<0.5	<0.5
8015M C10-C11		0.5	<0.5	<0.5	<0.5
8015M C12-C13		0.5	<0.5	<0.5	<0.5
8015M C14-C15		0.5	<0.5	<0.5	<0.5
8015M C16-C17		0.5	<0.5	<0.5	<0.5
8015M C18-C19		0.5	<0.5	<0.5	<0.5
8015M C20-C21		0.5	<0.5	<0.5	<0.5
8015M C22-C23		0.5	<0.5	<0.5	<0.5
8015M C24-C25		0.5	<0.5	<0.5	<0.5
8015M C26-C27		0.5	<0.5	<0.5	<0.5
8015M C28-C30		0.5	<0.5	<0.5	<0.5
8015M C31-C40		0.5	<0.5	<0.5	<0.5

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	DATE ANALYZED		10-29/11-3/11-4-97	10-29/11-3/11-4-97	10-29/11-3/11-4-97
	LAB SAMPLE I.D.		97100418	97100419	97100422
	CLIENT SAMPLE I.D.		B1-5.5	B1-11	B4-6
	DILUTION FACTOR		1	1	1
	PREP: TTLC		TTLC	TTLC	TTLC
	SAMPLE MATRIX		Soil	Soil	Soil
	REPORTING UNIT: mg/kg		mg/kg	mg/kg	mg/kg
METAL	METHOD	CRDL			
Antimony	6010	5.0	<5.0	<5.0	<5.0
Arsenic	6010	1.0	<1.0	<1.0	<1.0
Barium	6010	0.1	64	83	67
Beryllium	6010	0.1	<0.1	<0.1	<0.1
Cadmium	6010	0.1	<0.1	<0.1	<0.1
Chromium (VI)	7196	0.5	<0.5	<0.5	<0.5
Chromium Total	6010	0.05	15	42	20
Cobalt	6010	0.5	4.5	5.6	5.2
Copper	6010	0.1	9.0	33	15
Lead	6010	1.0	<1.0	<1.0	<1.0
Mercury	7471	0.01	<0.01	<0.01	<0.01
Molybdenum	6010	0.5	<0.5	<0.5	<0.5
Nickel	6010	0.5	5.2	8.1	6.3
Selenium	6010	1.0	<1.0	<1.0	<1.0
Silver	6010	0.1	<0.1	<0.1	<0.1
Thallium	6010	5.0	<5.0	<5.0	<5.0
Vanadium	6010	0.5	16	24	20
Zinc	6010	0.1	28	54	35

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	DATE ANALYZED		10-29/11-3/11-4-97	10-29/11-3/11-4-97	10-29/11-3/11-4-97
	LAB SAMPLE I.D.		97100423	97100424	97100425
	CLIENT SAMPLE I.D.		B4-10.5	B4-16	B5-1
	DILUTION FACTOR		1	1	1
	PREP: TTLC		TTLC	TTLC	TTLC
	SAMPLE MATRIX		Soil	Soil	Soil
	REPORTING UNIT: mg/kg		mg/kg	mg/kg	mg/kg
METAL	METHOD	CRDL			
Antimony	6010	5.0	<5.0	<5.0	<5.0
Arsenic	6010	1.0	<1.0	<1.0	<1.0
Barium	6010	0.1	57	94	57
Beryllium	6010	0.1	<0.1	<0.1	<0.1
Cadmium	6010	0.1	<0.1	<0.1	<0.1
Chromium (VI)	7196	0.5	0.88	<0.5	<0.5
Chromium Total	6010	0.05	14	30	12
Cobalt	6010	0.5	3.7	8.3	3.9
Copper	6010	0.1	11	13	5.1
Lead	6010	1.0	<1.0	<1.0	<1.0
Mercury	7471	0.01	<0.01	<0.01	<0.01
Molybdenum	6010	0.5	<0.5	<0.5	<0.5
Nickel	6010	0.5	5.3	14	5.4
Selenium	6010	1.0	<1.0	<1.0	<1.0
Silver	6010	0.1	<0.1	<0.1	<0.1
Thallium	6010	5.0	<5.0	<5.0	<5.0
Vanadium	6010	0.5	16	25	15
Zinc	6010	0.1	29	50	29

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	DATE ANALYZED		10-29/11-3/11-4-97	10-29/11-3/11-4-97	10-29/11-3/11-4-97
	LAB SAMPLE I.D.		97100426	97100427	97100428
	CLIENT SAMPLE I.D.		B5-6	B6-6	B7-2
	DILUTION FACTOR		1	1	1
	PREP: TTLC		TTLC	TTLC	TTLC
	SAMPLE MATRIX		Soil	Soil	Soil
	REPORTING UNIT: mg/kg		mg/kg	mg/kg	mg/kg
METAL	METHOD	CRDL			
Antimony	6010	5.0	<5.0	<5.0	<5.0
Arsenic	6010	1.0	<1.0	<1.0	<1.0
Barium	6010	0.1	56	77	67
Beryllium	6010	0.1	<0.1	<0.1	<0.1
Cadmium	6010	0.1	<0.1	<0.1	<0.1
Chromium (VI)	7196	0.5	<0.5	<0.5	<0.5
Chromium Total	6010	0.05	13	74	16
Cobalt	6010	0.5	4.0	5.2	4.2
Copper	6010	0.1	12	120	6.2
Lead	6010	1.0	<1.0	<1.0	<1.0
Mercury	7471	0.01	<0.01	<0.01	<0.01
Molybdenum	6010	0.5	<0.5	<0.5	<0.5
Nickel	6010	0.5	5.4	6.2	6.7
Selenium	6010	1.0	<1.0	<1.0	<1.0
Silver	6010	0.1	<0.1	<0.1	<0.1
Thallium	6010	5.0	<5.0	<5.0	<5.0
Vanadium	6010	0.5	17	21	19
Zinc	6010	0.1	28	45	33

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	DATE ANALYZED	10-29/11-3/11-4-97	10-29/11-3/11-4-97	10-29/11-3/11-4-97	
	LAB SAMPLE I.D.	97100429	97100430	97100431	
	CLIENT SAMPLE I.D.	B7-6	B8-2	B8-6	
	DILUTION FACTOR	1	1	1	
	PREP: TTLC	TTLC	TTLC	TTLC	
	SAMPLE MATRIX	Soil	Soil	Soil	
	REPORTING UNIT: mg/kg	mg/kg	mg/kg	mg/kg	
METAL	METHOD	CRDL			
Antimony	6010	5.0	<5.0	<5.0	<5.0
Arsenic	6010	1.0	<1.0	<1.0	<1.0
Barium	6010	0.1	60	61	61
Beryllium	6010	0.1	<0.1	<0.1	<0.1
Cadmium	6010	0.1	<0.1	<0.1	<0.1
Chromium (VI)	7196	0.5	<0.5	<0.5	<0.5
Chromium Total	6010	0.05	19	21	16
Cobalt	6010	0.5	4.0	4.3	4.0
Copper	6010	0.1	18	7.3	8.5
Lead	6010	1.0	<1.0	<1.0	<1.0
Mercury	7471	0.01	<0.01	<0.01	<0.01
Molybdenum	6010	0.5	<0.5	<0.5	<0.5
Nickel	6010	0.5	5.4	5.0	5.6
Selenium	6010	1.0	<1.0	<1.0	<1.0
Silver	6010	0.1	<0.1	<0.1	<0.1
Thallium	6010	5.0	<5.0	<5.0	<5.0
Vanadium	6010	0.5	16	16	17
Zinc	6010	0.1	30	29	28

ORANGE COAST ANALYTICAL, INC.
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4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

	DATE ANALYZED		10-29/11-3/11-4-97	10-29/11-3/11-4-97
	LAB SAMPLE I.D.		97100433	97100434
	CLIENT SAMPLE I.D.		B10-6	B11-6
	DILUTION FACTOR		1	1
	PREP: TTLC		TTLC	TTLC
	SAMPLE MATRIX		Soil	Soil
REPORTING UNIT: mg/kg			mg/kg	mg/kg
METAL	METHOD	CRDL		
Antimony	6010	5.0	<5.0	<5.0
Arsenic	6010	1.0	<1.0	<1.0
Barium	6010	0.1	33	53
Beryllium	6010	0.1	<0.1	<0.1
Cadmium	6010	0.1	<0.1	<0.1
Chromium (VI)	7196	0.5	<0.5	<0.5
Chromium Total	6010	0.05	7.3	13
Cobalt	6010	0.5	2.3	3.6
Copper	6010	0.1	3.4	6.4
Lead	6010	1.0	<1.0	<1.0
Mercury	7471	0.01	<0.01	<0.01
Molybdenum	6010	0.5	<0.5	<0.5
Nickel	6010	0.5	3.0	5.3
Selenium	6010	1.0	<1.0	<1.0
Silver	6010	0.1	<0.1	<0.1
Thallium	6010	5.0	<5.0	<5.0
Vanadium	6010	0.5	8.9	16
Zinc	6010	0.1	16	25

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4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

ANALYTICAL TEST RESULTS 8260
Reporting Unit: ug/kg

	Date Analysis		10/29/97	10/29/97	10/29/97	10/29/97	10/29/97
	Dilution Factor		1	1	1	1	1
	Lab Sample I.D.		97100418	97100419	97100420	97100421	97100422
	Client Sample I.D.		B1-5.5	B1-11	B2-5.5	B3-6	B4-6
COMPOUND	MDL	MB					
Acetone	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Bromodichloromethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Bromoform	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Bromomethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
2-Butanone	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Carbon Disulfide	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Carbon Tetrachloride	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Chlorobenzene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Chlorodibromomethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Chloroethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
2-Chloroethyl vinyl ether	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Chloroform	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Chloromethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
1,1-Dichloroethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
1,2-Dichloroethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
1,1-Dichloroethene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Trans 1,2-Dichloroethene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
1,2-Dichloropropane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
cis-1,3-Dichloropropene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
trans-1,3-Dichloropropene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Ethylbenzene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
2-Hexanone	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methylene chloride	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-pentanone	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Styrene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
1,1,2,2-Tetrachloroethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Tetrachloroethene	2.5	<2.5	74	130	18	42	76
Toluene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
1,1,1-Trichloroethane	2.5	<2.5	<2.6	<2.5	<2.5	<2.5	<2.5
1,1,2-Trichloroethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Trichloroethene	2.5	<2.5	24	37	7.3	10	21
Trichlorofluoromethane	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl acetate	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl Chloride	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Total Xylenes	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5

SURROGATE	SPK	ACP%	MB	%RC	%RC	%RC	%RC	%RC
RECOVERY	CONC		%RC					
Dibromofluoromethane	50	80-120	113	114	114	114	114	111
Toluene-d8	50	81-117	82	86	82	87	87	82
4-Bromofluorobenzene	50	74-121	98	85	80	88	94	77

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ANALYTICAL TEST RESULTS 8260
Reporting Unit: ug/kg

	Date Analysis		10/30/97	10/30/97	10/29/97	10/30/97	11/3/97
	Dilution Factor		20	1	1	1	1
	Lab Sample I.D.		97100424	97100426	97100427	97100429	97100431
	Client Sample I.D.		B4-16	B5-6	B6-6	B7-6	B8-6
COMPOUND	MDL	MB					
Acetone	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Bromodichloromethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Bromoform	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Bromomethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
2-Butanone	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Carbon Disulfide	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Carbon Tetrachloride	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Chlorobenzene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Chlorodibromomethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Chloroethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
2-Chloroethyl vinyl ether	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Chloroform	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Chloromethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
1,1-Dichloroethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
1,2-Dichloroethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
1,1-Dichloroethene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Trans 1,2-Dichloroethene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
1,2-Dichloropropane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
cis-1,3-Dichloropropene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
trans-1,3-Dichloropropene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Ethylbenzene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
2-Hexanone	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methylene chloride	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-pentanone	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Styrene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
1,1,2,2-Tetrachloroethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Tetrachloroethene	2.5	<2.5	2,200	25	130	55	2.9
Toluene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
1,1,1-Trichloroethane	2.5	<2.5	<2.6	<2.5	<2.5	<2.5	<2.5
1,1,2-Trichloroethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Trichloroethene	2.5	<2.5	92	5.3	31	19	<2.5
Trichlorofluoromethane	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl acetate	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl Chloride	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Total Xylenes	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5

SURROGATE	SPK	ACP%	MB	%RC	%RC	%RC	%RC	%RC
RECOVERY	CONC		%RC					
Dibromofluoromethane	50	80-120	109	108	107	114	108	102
Toluene-d8	50	81-117	84	84	85	81	86	106
4-Bromofluorobenzene	50	74-121	111	91	92	91	82	97

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ANALYTICAL TEST RESULTS 8260
Reporting Unit: ug/kg

	Date Analysis		10/30/97	10/30/97	10/30/97	10/30/97	10/30/97
	Dilution Factor		1	1	1	1	1
	Lab Sample I.D.		97100432	97100433	97100434	97100435	97100436
	Client Sample I.D.		B9-5.5	B10-6	B111-6	B12-6	B13-6
COMPOUND	MDL	MB					
Acetone	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Benzene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Bromodichloromethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Bromoform	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Bromomethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
2-Butanone	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Carbon Disulfide	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Carbon Tetrachloride	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Chlorobenzene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Chlorodibromomethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Chloroethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
2-Chloroethyl vinyl ether	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Chloroform	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Chloromethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
1,1-Dichloroethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
1,2-Dichloroethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
1,1-Dichloroethene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Trans 1,2-Dichloroethene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
1,2-Dichloropropane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
cis-1,3-Dichloropropene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
trans-1,3-Dichloropropene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Ethylbenzene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
2-Hexanone	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Methylene chloride	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
4-Methyl-2-pentanone	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Styrene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
1,1,2,2-Tetrachloroethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Tetrachloroethene	2.5	<2.5	3.6	27	61	<2.5	<2.5
Toluene	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
1,1,1-Trichloroethane	2.5	<2.5	<2.6	<2.5	<2.5	<2.5	<2.5
1,1,2-Trichloroethane	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Trichloroethene	2.5	<2.5	<2.5	6.4	16	<2.5	<2.7
Trichlorofluoromethane	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl acetate	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Vinyl Chloride	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5
Total Xylenes	2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5

SURROGATE	SPK	ACP%	MB	%RC	%RC	%RC	%RC	%RC
RECOVERY	CONC		%RC					
Dibromofluoromethane	50	80-120	113	108	110	115	108	112
Toluene-d8	50	81-117	82	84	87	84	88	82
4-Bromofluorobenzene	50	74-121	98	91	83	87	84	88

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QA / QC REPORT

Reporting Unit : mg/l

1 . Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

LAB Sample I . D . : 97100414-97100419-97100434

Analyte	DATE ANALYZED	R1	SP	MS	MSD	%MS	%MSD	RPD	ACP %MS	ACP RPD
Antimony	11/03/97	0.0	30	28	30	93	100	7	80-120	15
Arsenic	11/03/97	0.0	10	9.6	10	96	100	4	80-120	15
Barium	11/03/97	8.3	10	18	20.1	98	118	10	80-120	15
Beryllium	11/03/97	0.0	1.0	0.97	0.96	97	96	1	80-120	15
Cadmium	11/03/97	0.0	1.0	0.97	0.98	97	98	1	80-120	15
Chromium	11/03/97	4.2	5.0	9.2	9.8	100	112	6	80-120	15
Chromium(VI)	10/29/97	0.0	1.0	1.1	1.1	110	110	0	80-120	15
Cobalt	11/03/97	0.56	1.0	1.4	1.5	84	94	7	80-120	15
Copper	11/03/97	3.3	1.0	4.1	4.2	80	90	2	80-120	15
Lead	11/03/97	0.0	10	8.9	8.9	89	89	0	80-120	15
Mercury	11/04/97	0.0	0.020	0.017	0.016	85	80	6	80-120	15
Molybdenum	11/03/97	0.0	10	9.9	10.7	99	107	8	80-120	15
Nickel	11/03/97	0.81	5.0	5.2	5.8	88	100	11	80-120	15
Selenium	11/03/97	0.0	10	11	12	110	120	9	80-120	15
Silver	11/03/97	0.0	5.0	3.8	4.2	76	84	10	80-120	15
Thallium	11/03/97	0.0	30	25	25	83	83	0	80-120	15
Vanadium	11/03/97	2.4	5.0	7.5	7.4	102	100	1	80-120	15
Zinc	11/03/97	5.4	5.0	9.6	10.4	84	100	8	80-120	15

SPK CONC = Spiking Concentration ($\leq$5 X PQL) ; PQL = Practical Quantitation Limit.

%MS = Percent Recovery of MS %MSD = Percent Recovery of MSD ; RPD = Relative Percent Difference.

ACP = Acceptable Range of Percent ; R1 = Result of first analysis.

2 . Laboratory Quality Control check sample

LAB Sample I . D . :OCA 2153-OCA 2159-OCA 3171

ANALYTE	Date Analyzed	SPK CONC	RESULTS	%RECOVERY	ACP %
Antimony	11/03/97	30	27	90	80 - 120
Arsenic	11/03/97	10	10	100	80 - 120
Barium	11/03/97	1.0	1.0	100	80 - 120
Cadmium	11/03/97	1.0	1.0	100	80 - 120
Chromium(VI)	10/29/97	1.0	1.0	100	80 - 120
Chromium(T)	11/03/97	1.0	0.95	95	80 - 120
Cobalt	11/03/97	1.0	0.94	94	80 - 120
Copper	11/03/97	1.0	1.0	100	80 - 120
Lead	11/03/97	10	9.3	93	80 - 120
Mercury	11/04/97	0.02	0.018	90	80 - 120
Molybdenum	11/04/97	10	8.7	87	80 - 120
Nickel	11/03/97	5.0	5.3	106	80 - 120
Selenium	11/03/97	10	11	110	80 - 120
Thallium	11/03/97	30	30	100	80 - 120
Vanadium	11/03/97	5.0	5.1	102	80 - 120
Zinc	11/03/97	1.0	1.0	100	80 - 120

ANALYST: Burt Secrest DATE: 12/30/97

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8260 QA / QC REPORT

Reporting Unit : µg/kg

1 . Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Date Performed : 10/29/97
Batch # :
LAB Sample I . D . : 97100413

Analyte	R1	SP CONC	MS	MSD	%MS	%MSD	RPD	ACP %MS	ACP RPD
1,1-Dichloroethene	0.0	50	49	48	98	96	2	59-172	22
Benzene	0.0	50	47	45	94	90	4	66-142	21
Trihloroethene	0.0	50	50	46	100	92	8	62-137	24
Toluene	0.0	50	40	37	80	74	8	59-139	21
Chlorobenzene	0.0	50	53	50	106	100	6	60-133	21

SPK CONC = Spiking Concentration ($\leq$5 X PQL) ; PQL = Practical Quantitation Limit.
%MS = Percent Recovery of MS %MSD = Percent Recovery of MSD ; RPD = Relative Percent Difference.
ACP = Acceptable Range of Percent ; INITIAL RF_{ave} = Average Response Factor From Initial calibration;
DAILY RF = Response Factor From Daily Calibration; %RSD = Percent Relative Standard Deviation; R1 = Result of first analysis.

2 . Laboratory Quality Control check sample

Date Performed : 10/28/97
Batch # :
LAB Sample I . D . : OCA 4150

ANALYTE	SPK CONC	RESULTS	%RECOVERY	ACP %
1,1-Dicholoroethane	50	48	96	80- 120
Carbon tetrachloride	50	42	84	80- 120
Ethylbenzene	50	44	88	80- 120
Tetrachloroethene	50	40	80	80- 120

ANALYST: Erin Song

DATE: 12/30/97

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8260 QA / QC REPORT

Reporting Unit : µg/kg

1 . Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Date Performed : 10/30/97
Batch # :
LAB Sample I . D . : OCA 200

Analyte	R1	SP CONC	MS	MSD	%MS	%MSD	RPD	ACP %MS	ACP RPD
1,1-Dichloroethene	0.0	50	40	41	80	82	2	59-172	22
Benzene	0.0	50	44	45	88	90	2	66-142	21
Trihloroethene	0.0	50	50	50	100	100	0	62-137	24
Toluene	0.0	50	46	44	92	88	4	59-139	21
Chlorobenzene	0.0	50	50	53	100	106	6	60-133	21

SPK CONC = Spiking Concentration ($\leq$5 X PQL) ; PQL = Practical Quantitation Limit.
%MS = Percent Recovery of MS %MSD = Percent Recovery of MSD ; RPD = Relative Percent Difference.
ACP = Acceptable Range of Percent ; INITIAL RF_{ave} = Average Response Factor From Initial calibration;
DAILY RF = Response Factor From Daily Calibration; %RSD = Percent Relative Standard Deviation; R1 = Result of first analysis.

2 . Laboratory Quality Control check sample

Date Performed : 11/03/97
Batch # :
LAB Sample I . D . : OCA 4150

ANALYTE	SPK CONC	RESULTS	%RECOVERY	ACP %
1,1-Dicholoroethane	50	48	96	80- 120
Carbon tetrachloride	50	42	84	80- 120
Ethylbenzene	50	44	88	80- 120
Tetrachloroethene	50	40	80	80- 120

ANALYST: Erin Song

DATE: 12/30/97

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

8015m QA / QC REPORT

Reporting Unit : mg/kg

1 . Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Date Performed : 10/31/97
Batch # :
LAB Sample I . D . : OCA 200

Analyte	R1	SP CONC	MS	MSD	%MS	%MSD	RPD	ACP %MS	ACP RPD
Extractable Fuel Hydrocarbons	0.0	100	57	63	57	63	10	50-125	25

SPK CONC = Spiking Concentration ($\leq$5 X PQL) ; PQL = Practical Quantitation Limit.
%MS = Percent Recovery of MS %MSD = Percent Recovery of MSD ; RPD = Relative Percent Difference.
ACP = Acceptable Range of Percent ; INITIAL RF_{ave} = Average Response Factor From Initial calibration;
DAILY RF = Response Factor From Daily Calibration; %RSD = Percent Relative Standard Deviation; R1 = Result of first analysis.

2 . Laboratory Quality Control check sample

Date Performed : 10/31/97
Batch # :
LAB Sample I . D . : OCA 4177

ANALYTE	SPK CONC	RESULTS	%RECOVERY	ACP %
Extractable Fuel Hydrocarbons	2000	2200	110	80- 120

ANALYST: Michael Schwalbe

DATE: 12/30/97

Erler & Kalinowski, Inc.
Consulting Engineers and Scientists
Santa Monica Business Park
2951 28th Street, Suite 1020
Santa Monica, California 90405
(310) 314-8855
Fax (310) 314-8860

FACSIMILE TRANSMISSION COVER SHEET

DATE: October 29, 1997 CONTRACT NO: 961025.02

SUBJECT: REVISED Additional Analysis Request for Samples from 5030 Firestone Blvd, South Gate

Total Pages with Cover Sheet: 1

TO: Marie / Mark Noorani
Orange Coast Analytical
3002 Dow, Suite 532
Tustin, CA 92680

Fax No: (714) 832-0067

FROM: Steve Miller
EKI Santa Monica

REMARKS Please perform the following additional analyses for samples collected from 5030 Firestone Boulevard on October 28, 1997

Sample No.	Analyses Requested
B4 - 16	CCR Title 22 Metals
B5 - 6	pH
B6 - 6	pH
B7 - 6	pH
B8 - 6	pH
B10 - 6	CCR Title 22 Metals

Please call with any questions. Thank you

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532
Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

Analysis Request and Chain of Custody Record

Lab No. _____
Page 1 of 3

REQUIRED TAT: _____

CUSTOMER INFORMATION		PROJECT INFORMATION	
COMPANY:	ERLER + KALINOWSKI, INC.	PROJECT NAME	WEBB
SEND REPORT TO:	STEVE MILLER	NUMBER:	961025.CZ
ADDRESS:	2951 28TH ST. SUITE 1020	LOCATION:	
	SANTA MONICA, CA 90405	ADDRESS	5030 FIRESTONE BLVD.
			SOUTH GATE
PHONE:	310 314 8855 FAX 310 314 8860	SAMPLED BY	KCH

SAMPLE ID	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER TYPE	PRES.	ANALYSIS/METHOD REQUEST: 8260	CCR TITLE 22 METALS	8015 M	PH	CCLD EXTS				REMARKS/PRECAUTIONS
B1 - 5.5	1	10/28/97	7:37	SOIL	BRASS	NO	X	X	X	X					
B1 - 11			7:43				X	X							
B1 - 15.5			7:50												HOLD
B1 - 20			7:58												HOLD
B2 - 5.5			8:10				X		X						
B2 - 10.5			8:15												HOLD
B3 - 6			8:34				X		X						
B3 - 11			8:41												HOLD
B4 - 6			9:15				X	X		X					
B4 - 10.5			9:18					X	X						
B4 - 16			9:27				X								
B4 - 20.5			9:35												HOLD
B5 - 1			9:55					X	X	X					
B5 - 6			10:00				X	X							

Total No. of Samples:

Method of Shipment:

Relinquished By:	Date/Time:	Received By:	Date/Time:
ROB HESSE	10/28/97		
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received For Lab By:	Date/Time: 10/28/97

Reporting Format: (check)
NORMAL _____ S.D. HMMD _____
RWQCB _____ OTHER _____

Sample Integrity: (check)
intact _____ on ice _____

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pickup samples.

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532
Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

Analysis Request and Chain of Custody Record

Lab No
Page 2 of 3

REQUIRED TAT:

CUSTOMER INFORMATION		PROJECT INFORMATION	
COMPANY:	ERLER & KALINOWSKI, INC.	PROJECT NAME:	WEBB
SEND REPORT TO:	STEVE MILLER	NUMBER	9d025.02
ADDRESS:	2951 28TH ST. SUITE 1020	LOCATION.	
	SANTA MONICA, CA 90405	ADDRESS	5030 FILESTONE BLVD. SOUTH GATE
PHONE:	310 314 8855 FAX 310 314 8860	SAMPLED BY	RCH

SAMPLE ID	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER TYPE	PRES.	ANALYSIS/METHOD REQUEST: 8260	CCR TITLE 22 METALS	8015M (GC/LD EXT.)	pH	REMARKS/PRECAUTIONS
B5 – 10.5	1	10/28/97	10:05	SOIL	BRASS	NO					HOLD
B6 – 6			11:15				X	X			
B6 – 10.5			11:23								HOLD
B7 – 2			11:35				X	X	X	X	
B7 – 6			11:41				X	X			
B7 – 11			11:46								HOLD
B8 – 2			12:00					X	X	X	
B8 – 6			12:05				X	X			
B8 – 11			12:08								HOLD
B9 – 5.5			12:38				X		X		
B9 – 10.5			12:42								HOLD
B10 – 6			12:50				X		X		
B10 – 11			12:57								HOLD
B11 – 6			13:15				X	X	X		

Total No. of Samples:

Method of Shipment:

Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By: ROB HESSE	Date/Time: 10/28/97	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received For Lab By:	Date/Time: 10/28/97 1:20PM

Reporting Format: (check)
NORMAL _____ S.D. HMMD _____
RWQCB _____ OTHER _____

Sample Integrity: (check)
intact _____ on ice _____

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pickup samples.

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532
Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

Analysis Request and Chain of Custody Record

Lab Job No. _____
Page 3 of 3

REQUIRED TAT: _____

CUSTOMER INFORMATION	PROJECT INFORMATION
COMPANY: ERLER + KALINOWSKI, INC.	PROJECT NAME: WEPB
SEND REPORT TO: STEVE MILLER	NUMBER: 961025.02
ADDRESS: 2951 28TH ST. SUITE 1020 SANTA MONICA, CA 90405	LOCATION: ADDRESS: 5030 FIRESTONE BLVD. SOUTH GATE
PHONE 310 314 8855 FAX 310 314 8860	SAMPLED BY: RCH

SAMPLE ID	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER TYPE	PRES.	ANALYSIS/METHOD REQUEST: 8266	CCR TITLE 22 METALS	BOISM	PH	REMARKS/PRECAUTIONS
B11-11	1	10/28/97	13:20	SOIL	BRASS	NO					HOLD
B12-6			13:30				X				
B12-11			13:38								HOLD
B13-6			13:53				X				
B13-11			13:58								HOLD
B14-6			14:10								HOLD
B14-11			14:15								HOLD

Total No. of Samples: _____ Method of Shipment: _____

Relinquished By: ROB HESSE	Date/Time: 10/28/97	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received For Lab By:	Date/Time: 10/28/97 4:00 PM

Reporting Format: (check)
NORMAL _____ S.D. HMMD _____
RWQCB _____ OTHER _____

Sample Integrity: (check)
intact _____ on ice _____

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pickup samples.

ORANGE COAST ANALYTICAL, INC.
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4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

LABORATORY REPORT FORM

Laboratory Name: Orange Coast Analytical

Address: 3002 Dow Suite 532 Tustin, CA 92780

Telephone: (714) 832-0064

Laboratory Certification
(ELAP) No.: 1416 Expiration Date: 1999

Laboratory Director's Name (Print): Mark Noorani

Laboratory Director's Signature: Mark Noorani

Client: Erler & Kalinowski, Inc.
Project No.: 961025.02
Project Name: Webb
Laboratory Reference: EKI 9688A

Analytical Method: 8010

Other

Date Sampled: 10-28-97
Date Received: 10-28-97
Date Reported: 11-13-97

Sample Matrix: Soil
Extraction Method: n/a
Extraction Material: n/a

Chain of Custody Received: Yes X
Sample Condition: Chilled

-- Sample Headspace Description (%): 0
-- Sample Container Material: Brass

ORANGE COAST ANALYTICAL, INC.
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4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			11-11-97	11-11-97	11-11-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				3	3
LAB SAMPLE I.D.				97110050	97110051
CLIENT SAMPLE I.D.				B1-20	B2-10.5
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	35	45
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	40	<5.0
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	SPK CONC	ACP%	MB %RC	%RC	
1,4-dichlorobutane	20	78-115	95	79	95

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

ORANGE COAST ANALYTICAL, INC.
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4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			11-11-97	11-11-97	11-12-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				3	600
LAB SAMPLE I.D.				97110052	97110053
CLIENT SAMPLE I.D.				B3-11	B4-20.5
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	120	140,000
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	34	270,000
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	**SPK CONC**	**ACP%**	**MB %RC**	**%RC**	
1,4-dichlorobutane	20	78-115	95	95	103

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			11-12-97	11-12-97	11-12-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				3	3
LAB SAMPLE I.D.				97110054	97110055
CLIENT SAMPLE I.D.				B5-10.5	B6-10.5
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	65	19
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	190	25
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	**SPK CONC**	**ACP%**	**MB %RC**	**%RC**	
1,4-dichlorobutane	20	78-115	98	95	109

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

ORANGE COAST ANALYTICAL, INC.
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4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			11-11-97	11-11-97	11-11-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				3	3
LAB SAMPLE I.D.				97110056	97110057
CLIENT SAMPLE I.D.				B7-11	B8-11
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	<5.0	41
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	<5.0	50
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	SPK CONC	ACP%	MB %RC	%RC	
1,4-dichlorobutane	20	78-115	95	92	102

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

ORANGE COAST ANALYTICAL, INC.
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4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			11-11-97	11-11-97	11-11-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				3	3
LAB SAMPLE I.D.				97110058	97110059
CLIENT SAMPLE I.D.				B9-10.5	B10-11
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	22	<5.0
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	41	36
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	**SPK CONC**	**ACP%**	**MB %RC**	**%RC**	
1,4-dichlorobutane	20	78-115	95	92	99

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			11-11-97	11-11-97
DATE EXTRACTED				n/a
DILUTION FACTOR				3
LAB SAMPLE I.D.				97110060
CLIENT SAMPLE I.D.				B11-11
COMPOUND		MDL	MB	
Bromodichloromethane		5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0
Chloromethane		10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25
Chloroform		5.0	<5.0	<5.0
Chloromethane		10	<10	<10
1,2-Dichlorobenzene		10	<10	<10
1,3-Dichlorobenzene		10	<10	<10
1,4-Dichlorobenzene		10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20
Methylene chloride		25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	<5.0
1,1,1-Trichloroethane		5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	35
Trichlorofluoromethane		5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0
SURROGATE	SPK CONC	ACP%	MB %RC	%RC
1,4-dichlorobutane	20	78-115	95	85

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

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8010 QA / QC REPORT
Reporting Unit : µg/kg

1 . Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Date Performed : 11/11/97
Batch # :
LAB Sample I . D . : 97110056

Analyte	R1	SP CONC	MS	MSD	%MS	%MSD	RPD	ACP %MS	ACP RPD
1,1-Dichloroethane	0.0	20	22	22	110	110	0	59-115	10
Trichloroethene	0.0	20	20	22	100	110	10	79-139	18
Tertachloroethene	0.0	20	22	23	110	115	4	50-141	11

SPK CONC = Spiking Concentration ($\leq$5 X PQL) ; PQL = Practical Quantitation Limit.
%MS = Percent Recovery of MS %MSD = Percent Recovery of MSD ; RPD = Relative Percent Difference.
ACP = Acceptable Range of Percent ; INITIAL RF_{ave} = Average Response Factor From Initial calibration;
DAILY RF = Response Factor From Daily Calibration; %RSD = Percent Relative Standard Deviation; R1 = Result of first analysis.

2 . Laboratory Quality Control check sample

Date Performed : 11/11/97
Batch # :
LAB Sample I . D . : OCA 3880

ANALYTE	SPK CONC	RESULTS	%RECOVERY	ACP %
1,1-Dicholoroethane	20	20	100	80- 120
1,1,1-Trichloroethane	20	19	95	80- 120
Bromoform	20	18	90	80- 120

ANALYST: Mitra Samiei DATE: 11/12/97

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532
Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

Analysis Request and Chain of Custody Record

Lab Job No: _____
Page 1 of 3

REQUIRED TAT: _____

CUSTOMER INFORMATION		PROJECT INFORMATION	
COMPANY:	ERLER + KALINOWSKI, INC.	PROJECT NAME	WEBB
SEND REPORT TO:	STEVE MILLER	NUMBER:	961025.02
ADDRESS:	2951 28TH ST. SUITE 1020	LOCATION	
	SANTA MONICA, CA 90405	ADDRESS	5030 FIRESTONE BLVD.
			SOUTH GATE
PHONE:	310 314 8855 FAX: 310 314 8860	SAMPLED BY	RCH

SAMPLE ID	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER TYPE	PRES.	ANALYSIS/METHOD REQUEST: 8260	CCR TITLE 22 METALS	8015 M	PH	COLD EXTS.	REMARKS/PRECAUTIONS
B1 - 5.5	1	10/28/97	7:37	SOIL	BRASS	NO	X	X	X	X		
B1 - 11			7:43				X	X				
B1 - 15.5			7:50									HOLD
B1 - 20			7:58									HOLD
B2 - 5.5			8:10				X		X			
B2 - 10.5			8:15									HOLD
B3 - 6			8:34				X		X			
B3 - 11			8:41									HOLD
B4 - 6			9:15				X	X		X		
B4 - 10.5			9:18					X	X			
B4 - 16			9:27				X					
B4 - 20.5			9:35									HOLD
B5 - 1			9:55					X	X	X		
B5 - 6			10:00				X	X				

Total No. of Samples:

Relinquished By: ROB HESSE Date/Time: 10/28/97

Relinquished By: Date/Time:

Relinquished By: Date/Time:

Method of Shipment:

Received By: Date/Time:

Received By: Date/Time:

Received For Lab By: Date/Time: 10/28/97 4PM

Reporting Format: (check)
NORMAL _____ S.D. HMMD _____
RWQCB _____ OTHER _____

Sample Integrity: (check)
intact _____ on ice _____

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pickup samples.

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[illegible] COAST ANALYTICAL, INC.
3002 Dow, Suite 532
Tustin, CA 92680
(714) 832-0064, Fax (714) 832-0067

Analysis Request and Chain of Custody Record

Lab Job No: _____
Page 2 of 3

REQUIRED TAT: _____

CUSTOMER INFORMATION		PROJECT INFORMATION	
COMPANY:	ERLER & KALINOWSKI, INC.	PROJECT NAME	WEBB
SEND REPORT TO:	STEVE MILLER	NUMBER	96025.02
ADDRESS:	2951 28TH ST. SUITE 1020	LOCATION	
	SANTA MONICA, CA 90405	ADDRESS	5030 FIRESTONE BLVD.
			SOUTH GATE
PHONE:	310 314 8855 FAX: 310 314 8860	SAMPLED BY:	RCH

SAMPLE ID	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER TYPE	PRES.	ANALYSIS/METHOD REQUEST: 8260	CCR TITLE 22 METALS	8015M	EDD EXTS.					REMARKS/PRECAUTIONS
B5 - 10.5	1	10/28/97	10:05	SOIL	BRASS	NO									HOLD
B6 - 6			11:15				X	X							
B6 - 10.5			11:23												HOLD
B7 - 2			11:35				X	X	X	X					
B7 - 6			11:41				X	X							
B7 - 11			11:46												HOLD
B8 - 2			12:00					X	X	X					
B8 - 6			12:05				X	X							
B8 - 11			12:08												HOLD
B9 - 5.5			12:28				X		X						
B9 - 10.5			12:42												HOLD
B10 - 6			12:50				X		X						
B10 - 11			12:57												HOLD
B11 - 6			13:15				X	X	X						

Total No. of Samples:

Method of Shipment:

Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By: ROB HEESE	Date/Time: 10/28/97	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received For Lab By:	Date/Time: 10/28/97 4PM

Reporting Format: (check)
NORMAL _____ S.D. HMMD _____
RWQCB _____ OTHER _____

Sample Integrity: (check)
intact _____ on ice _____

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pickup samples.

ORANGE COAST ANALYTICAL, INC.
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(714) 832-0064, Fax (714) 832-0067

Analysis Request and Chain of Custody Record

Lab Job No: _____
Page 3 of 3

REQUIRED TAT: _____

CUSTOMER INFORMATION		PROJECT INFORMATION	
COMPANY:	ERLER + KALINOWSKI, INC.	PROJECT NAME:	WEBB
SEND REPORT TO:	STEVE MILLER	NUMBER	961025.02
ADDRESS:	2951 28TH ST. SUITE 1020	LOCATION	
	SANTA MONICA, CA 90405	ADDRESS	5030 FIRESTONE BLVD. SOUTH GATE
PHONE:	310 314 8855 FAX: 310 314 8860	SAMPLED BY	KCH

SAMPLE ID	NO. OF CONTAINERS	SAMPLE DATE	SAMPLE TIME	SAMPLE MATRIX	CONTAINER TYPE	PRES.	ANALYSIS/METHOD REQUEST: 8260	OCR TITLE 22 METALS	8015 M GCID EXTS.	PH	REMARKS/PRECAUTIONS
B11-11	1	10/28/97	13:20	SOIL	BRASS	NO					HOLD
B12-6			13:30				X				
B12-11			13:38								HOLD
B13-6			13:53				X				
B13-11			13:58								HOLD
B14-6			14:10								HOLD
B14-11			14:15								HOLD

Total No. of Samples:

Method of Shipment:

Relinquished By: ROB HESSE	Date/Time: 10/28/97	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received By:	Date/Time:
Relinquished By:	Date/Time:	Received For Lab By: [signature]	Date/Time: 10/28/97 4:00 PM

Reporting Format: (check)
NORMAL _____ S.D. HMMD _____
RWQCB _____ OTHER _____

Sample Integrity: (check)
intact _____ on ice _____

All samples remain the property of the client who is responsible for disposal. A disposal fee may be imposed if client fails to pickup samples.

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ORANGE COAST ANALYTICAL, INC.
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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

LABORATORY REPORT FORM

Laboratory Name: Orange Coast Analytical

Address: 3002 Dow Suite 532 Tustin, CA 92780

Telephone: (714) 832-0064

Laboratory Certification
(ELAP) No.: 1416 Expiration Date: 1999

Laboratory Director's Name (Print): Mark Noorani

Laboratory Director's Signature: Mark Noorani

Client: Erler & Kalinowski, Inc.
Project No.: 961025.00
Project Name: Webb
Laboratory Reference: EKI 9783

Analytical Method: 8010

Other

Date Sampled: 12-02/03-97
Date Received: 12-05-97
Date Reported: 12-12-97

Sample Matrix: H20
Extraction Method: n/a
Extraction Material: n/a

Chain of Custody Received: Yes X
Sample Condition: Chilled

-- Sample Headspace Description (%): 0
-- Sample Container Material: Brass

ORANGE COAST ANALYTICAL, INC.
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FAX TRANSMITTAL

DATE: December 12, 1997

COMPANY: Erler & Kalinowski

ATTENTION: Mr. Steve Miller

FROM: Mark Noorani

PAGES: COVER + 22

PLEASE CONTACT US TO VERIFY THAT YOU RECEIVED ENTIRE TRANSMITTAL.

THANK YOU.

ORANGE COAST ANALYTICAL, INC.
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8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			12-11-97	12-11-97	12-11-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				5	5
LAB SAMPLE I.D.				97120193	97120194
CLIENT SAMPLE I.D.				B15-10	B15-16
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	<5.0	<5.0
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	<5.0	<5.0
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	SPK CONC	ACP%	MB %RC	%RC	
1,4-dichlorobutane	20	78-115	114	102	112

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

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8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			12-11-97	12-11-97	12-11-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				5	5
LAB SAMPLE I.D.				97120195	97120196
CLIENT SAMPLE I.D.				B15-20.5	B15-26.5
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	<5.0	54
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	<5.0	380
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	SPK CONC	ACP%	MB %RC	%RC	
1,4-dichlorobutane	20	78-115	114	114	115

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

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8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			12-11-97	12-11-97	12-11-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				5	5
LAB SAMPLE I.D.				97120197	97120198
CLIENT SAMPLE I.D.				B15-31	B15-35.5
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	41	26
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	520	140
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	SPK CONC	ACP%	MB %RC	%RC	
1,4-dichlorobutane	20	78-115	114	114	109

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

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8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			12-11-97	12-11-97	12-11-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				5	20
LAB SAMPLE I.D.				97120199	97120200
CLIENT SAMPLE I.D.				B15-40	B15-44.5
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	<5.0	<5.0
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	1,200	1,300
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	**SPK CONC**	**ACP%**	**MB %RC**	**%RC**	
1,4-dichlorobutane	20	78-115	114	100	109

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

ORANGE COAST ANALYTICAL, INC.
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8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			12-11-97	12-11-97	12-05-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				5	10
LAB SAMPLE I.D.				97120201	97120202
CLIENT SAMPLE I.D.				B16-6	B16-11
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	<5.0	<5.0
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	<5.0	<5.0
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	SPK CONC	ACP%	MB %RC	%RC	
1,4-dichlorobutane	20	78-115	114	104	105

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

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8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED		12-08-97	12-08-97	12-08-97
DATE EXTRACTED			n/a	n/a
DILUTION FACTOR			5	5
LAB SAMPLE I.D.			97120203	97120204
CLIENT SAMPLE I.D.			B16-16	B16-21
COMPOUND	MDL	MB		
Bromodichloromethane	5.0	<5.0	<5.0	<5.0
Bromoform	5.0	<5.0	<5.0	<5.0
Bromomethane	5.0	<5.0	<5.0	<5.0
Carbon tetrachloride	5.0	<5.0	<5.0	<5.0
Chlorobenzene	5.0	<5.0	<5.0	<5.0
Chlorodibromomethane	5.0	<5.0	<5.0	<5.0
Chloromethane	10	<10	<10	<10
2-Chloroethyl vinyl ether	25	<25	<25	<25
Chloroform	5.0	<5.0	<5.0	<5.0
Chloromethane	10	<10	<10	<10
1,2-Dichlorobenzene	10	<10	<10	<10
1,3-Dichlorobenzene	10	<10	<10	<10
1,4-Dichlorobenzene	10	<10	<10	<10
1,1-Dichloroethane	5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane	5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene	5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene	5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane	5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene	5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene	20	<20	<20	<20
Methylene chloride	25	<25	<25	<25
1,1,2,2-Tetrachloroethane	5.0	<5.0	<5.0	<5.0
Tetrachloroethene	5.0	<5.0	27	41
1,1,1-Trichloroethane	5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane	5.0	<5.0	<5.0	<5.0
Trichloroethene	5.0	<5.0	<5.0	<5.0
Trichlorofluoromethane	5.0	<5.0	<5.0	<5.0
Vinyl chloride	5.0	<5.0	<5.0	<5.0

SURROGATE	SPK CONC	ACP%	MB %RC	%RC	
1,4-dichlorobutane	20	78-115	98	95	101

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

ORANGE COAST ANALYTICAL, INC.
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8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED		12-08-97	12-08-97	12-08-97
DATE EXTRACTED			n/a	n/a
DILUTION FACTOR			5	5
LAB SAMPLE I.D.			97120205	97120206
CLIENT SAMPLE I.D.			B16-26	B16-31
COMPOUND	MDL	MB		
Bromodichloromethane	5.0	<5.0	<5.0	<5.0
Bromoform	5.0	<5.0	<5.0	<5.0
Bromomethane	5.0	<5.0	<5.0	<5.0
Carbon tetrachloride	5.0	<5.0	<5.0	<5.0
Chlorobenzene	5.0	<5.0	<5.0	<5.0
Chlorodibromomethane	5.0	<5.0	<5.0	<5.0
Chloromethane	10	<10	<10	<10
2-Chloroethyl vinyl ether	25	<25	<25	<25
Chloroform	5.0	<5.0	<5.0	<5.0
Chloromethane	10	<10	<10	<10
1,2-Dichlorobenzene	10	<10	<10	<10
1,3-Dichlorobenzene	10	<10	<10	<10
1,4-Dichlorobenzene	10	<10	<10	<10
1,1-Dichloroethane	5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane	5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene	5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene	5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane	5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene	5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene	20	<20	<20	<20
Methylene chloride	25	<25	<25	<25
1,1,2,2-Tetrachloroethane	5.0	<5.0	<5.0	<5.0
Tetrachloroethene	5.0	<5.0	47	27
1,1,1-Trichloroethane	5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane	5.0	<5.0	<5.0	<5.0
Trichloroethene	5.0	<5.0	<5.0	<5.0
Trichlorofluoromethane	5.0	<5.0	<5.0	<5.0
Vinyl chloride	5.0	<5.0	<5.0	<5.0

SURROGATE	SPK CONC	ACP%	MB %RC	%RC	
1,4-dichlorobutane	20	78-115	98	109	97

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

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8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			12-08-97	12-08-97	12-08-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				5	5
LAB SAMPLE I.D.				97120207	97120208
CLIENT SAMPLE I.D.				B16-35.5	B16-41
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	<5.0	<5.0
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	<5.0	410
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	**SPK CONC**	**ACP%**	**MB %RC**	**%RC**	
1,4-dichlorobutane	20	78-115	98	100	103

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

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8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			12-08-97	12-08-97	12-08-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				5	5
LAB SAMPLE I.D.				97120209	97120210
CLIENT SAMPLE I.D.				B16-46	B16-51
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	<5.0	<5.0
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	390	1,300
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	SPK CONC	ACP%	MB %RC	%RC	
1,4-dichlorobutane	20	78-115	98	99	90

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

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8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			12-08-97	12-08-97	12-08-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				5	5
LAB SAMPLE I.D.				97120211	97120212
CLIENT SAMPLE I.D.				B17-6	B17-11
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	<5.0	<5.0
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	<5.0	<5.0
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	SPK CONC	ACP%	MB %RC	%RC	
1,4-dichlorobutane	20	78-115	98	101	102

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

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8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			12-08-97	12-08-97	12-08-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				5	5
LAB SAMPLE I.D.				97120213	97120214
CLIENT SAMPLE I.D.				B17-16	B17-21
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	<5.0	<5.0
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	<5.0	<5.0
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	SPK CONC	ACP%	MB %RC	%RC	
1,4-dichlorobutane	20	78-115	91	100	102

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL);
NA = Not Analyzed

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8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			12-08-97	12-08-97	12-08-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				5	5
LAB SAMPLE I.D.				97120215	97120216
CLIENT SAMPLE I.D.				B17-26	B17-31.5
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	<5.0	<5.0
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	48	56
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	SPK CONC	ACP%	MB %RC	%RC	
1,4-dichlorobutane	20	78-115	91	104	106

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

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8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			12-08-97	12-08-97	12-08-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				5	5
LAB SAMPLE I.D.				97120217	97120218
CLIENT SAMPLE I.D.				B17-36	B17-41
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	<5.0	<5.0
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	1,400	1,200
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	**SPK CONC**	**ACP%**	**MB %RC**	**%RC**	
1,4-dichlorobutane	20	78-115	91	104	93

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

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8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			12-08-97	12-08-97	12-08-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				5	5
LAB SAMPLE I.D.				97120219	97120220
CLIENT SAMPLE I.D.				B17-46	B17-53.5
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	<5.0	<5.0
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	1,600	1,400
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	**SPK CONC**	**ACP%**	**MB %RC**	**%RC**	
1,4-dichlorobutane	20	78-115	91	103	103

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL);
NA = Not Analyzed

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8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			12-08-97	12-08-97	12-09-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				5	5
LAB SAMPLE I.D.				97120221	97120222
CLIENT SAMPLE I.D.				B18-11	B18-16
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	400	370
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	110	610
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	SPK CONC	ACP%	MB %RC	%RC	
1,4-dichlorobutane	20	78-115	91	101	100

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8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			12-09-97	12-09-97	12-09-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				100	5
LAB SAMPLE I.D.				97120223	97120224
CLIENT SAMPLE I.D.				B18-21	B18-27
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	660	93
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	16,000	750
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	SPK CONC	ACP%	MB %RC	%RC	
1,4-dichlorobutane	20	78-115	97	105	101

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

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8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			12-09-97	12-09-97	12-09-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				5	5
LAB SAMPLE I.D.				97120225	97120226
CLIENT SAMPLE I.D.				B18-31	B18-36
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	140	<5.0
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	2,000	56
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	**SPK CONC**	**ACP%**	**MB %RC**	**%RC**	
1,4-dichlorobutane	20	78-115	97	103	101

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

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8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			12-09-97	12-09-97	12-09-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				5	20
LAB SAMPLE I.D.				97120227	97120228
CLIENT SAMPLE I.D.				B18-41	B18-46
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	91	180
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	2,300	8,700
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	**SPK CONC**	**ACP%**	**MB %RC**	**%RC**	
1,4-dichlorobutane	20	78-115	97	96	112

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

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8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED		12-09-97	12-09-97	12-09-97
DATE EXTRACTED			n/a	n/a
DILUTION FACTOR			5	5
LAB SAMPLE I.D.			97120229	97120230
CLIENT SAMPLE I.D.			B19-16	B19-21
COMPOUND	MDL	MB		
Bromodichloromethane	5.0	<5.0	<5.0	<5.0
Bromoform	5.0	<5.0	<5.0	<5.0
Bromomethane	5.0	<5.0	<5.0	<5.0
Carbon tetrachloride	5.0	<5.0	<5.0	<5.0
Chlorobenzene	5.0	<5.0	<5.0	<5.0
Chlorodibromomethane	5.0	<5.0	<5.0	<5.0
Chloromethane	10	<10	<10	<10
2-Chloroethyl vinyl ether	25	<25	<25	<25
Chloroform	5.0	<5.0	<5.0	<5.0
Chloromethane	10	<10	<10	<10
1,2-Dichlorobenzene	10	<10	<10	<10
1,3-Dichlorobenzene	10	<10	<10	<10
1,4-Dichlorobenzene	10	<10	<10	<10
1,1-Dichloroethane	5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane	5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene	5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene	5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane	5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene	5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene	20	<20	<20	<20
Methylene chloride	25	<25	<25	<25
1,1,2,2-Tetrachloroethane	5.0	<5.0	<5.0	<5.0
Tetrachloroethene	5.0	<5.0	420	280
1,1,1-Trichloroethane	5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane	5.0	<5.0	<5.0	<5.0
Trichloroethene	5.0	<5.0	200	1,800
Trichlorofluoromethane	5.0	<5.0	<5.0	<5.0
Vinyl chloride	5.0	<5.0	<5.0	<5.0

SURROGATE	SPK CONC	ACP%	MB %RC	%RC	
1,4-dichlorobutane	20	78-115	97	102	106

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

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8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			12-09-97	12-09-97	12-09-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				5	5
LAB SAMPLE I.D.				97120231	97120232
CLIENT SAMPLE I.D.				B19-26	B19-31
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	280	250
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	1,500	1,200
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	**SPK CONC**	**ACP%**	**MB %RC**	**%RC**	
1,4-dichlorobutane	20	78-115	97	108	97

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL);
NA = Not Analyzed

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED			12-09-97	12-09-97	12-11-97
DATE EXTRACTED				n/a	n/a
DILUTION FACTOR				5	20
LAB SAMPLE I.D.				97120233	97120234
CLIENT SAMPLE I.D.				B19-36.5	B19-41
COMPOUND		MDL	MB		
Bromodichloromethane		5.0	<5.0	<5.0	<5.0
Bromoform		5.0	<5.0	<5.0	<5.0
Bromomethane		5.0	<5.0	<5.0	<5.0
Carbon tetrachloride		5.0	<5.0	<5.0	<5.0
Chlorobenzene		5.0	<5.0	<5.0	<5.0
Chlorodibromomethane		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
2-Chloroethyl vinyl ether		25	<25	<25	<25
Chloroform		5.0	<5.0	<5.0	<5.0
Chloromethane		10	<10	<10	<10
1,2-Dichlorobenzene		10	<10	<10	<10
1,3-Dichlorobenzene		10	<10	<10	<10
1,4-Dichlorobenzene		10	<10	<10	<10
1,1-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,2-Dichloroethane		5.0	<5.0	<5.0	<5.0
1,1-Dichloroethene		5.0	<5.0	<5.0	<5.0
Trans 1,2-Dichloroethene		5.0	<5.0	<5.0	<5.0
1,2-Dichloropropane		5.0	<5.0	<5.0	<5.0
cis-1,3-Dichloropropene		5.0	<5.0	<5.0	<5.0
trans-1,3-Dichloropropene		20	<20	<20	<20
Methylene chloride		25	<25	<25	<25
1,1,2,2-Tetrachloroethane		5.0	<5.0	<5.0	<5.0
Tetrachloroethene		5.0	<5.0	<0.5	160
1,1,1-Trichloroethane		5.0	<5.0	<5.0	<5.0
1,1,2-Trichloroethane		5.0	<5.0	<5.0	<5.0
Trichloroethene		5.0	<5.0	110	4,000
Trichlorofluoromethane		5.0	<5.0	<5.0	<5.0
Vinyl chloride		5.0	<5.0	<5.0	<5.0
SURROGATE	SPK CONC	ACP%	MB %RC	%RC	
1,4-dichlorobutane	20	78-115	114	97	114

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

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8010 ANALYTICAL TEST RESULT

Reporting Unit: µg/kg

DATE ANALYZED		12-09-97	12-11-97
DATE EXTRACTED			n/a
DILUTION FACTOR			20
LAB SAMPLE I.D.			97120235
CLIENT SAMPLE I.D.			B19-46
COMPOUND	MDL	MB	
Bromodichloromethane	5.0	<5.0	<5.0
Bromoform	5.0	<5.0	<5.0
Bromomethane	5.0	<5.0	<5.0
Carbon tetrachloride	5.0	<5.0	<5.0
Chlorobenzene	5.0	<5.0	<5.0
Chlorodibromomethane	5.0	<5.0	<5.0
Chloromethane	10	<10	<10
2-Chloroethyl vinyl ether	25	<25	<25
Chloroform	5.0	<5.0	<5.0
Chloromethane	10	<10	<10
1,2-Dichlorobenzene	10	<10	<10
1,3-Dichlorobenzene	10	<10	<10
1,4-Dichlorobenzene	10	<10	<10
1,1-Dichloroethane	5.0	<5.0	<5.0
1,2-Dichloroethane	5.0	<5.0	<5.0
1,1-Dichloroethene	5.0	<5.0	<5.0
Trans 1,2-Dichloroethene	5.0	<5.0	<5.0
1,2-Dichloropropane	5.0	<5.0	<5.0
cis-1,3-Dichloropropene	5.0	<5.0	<5.0
trans-1,3-Dichloropropene	20	<20	<20
Methylene chloride	25	<25	<25
1,1,2,2-Tetrachloroethane	5.0	<5.0	<5.0
Tetrachloroethene	5.0	<5.0	180
1,1,1-Trichloroethane	5.0	<5.0	<5.0
1,1,2-Trichloroethane	5.0	<5.0	<5.0
Trichloroethene	5.0	<5.0	4,300
Trichlorofluoromethane	5.0	<5.0	<5.0
Vinyl chloride	5.0	<5.0	<5.0

SURROGATE	SPK CONC	ACP%	MB %RC	%RC
1,4-dichlorobutane	20	78-115	114	115

MDL = Method Detection Limit; MB = Method Blank; ND = Not Detected (Below MDL); NA = Not Analyzed

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8010 QA / QC REPORT

Reporting Unit : µg/kg

1 . Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Date Performed : 12/08/97
Batch # :
LAB Sample I . D . : 97120207

Analyte	R1	SP CONC	MS	MSD	%MS	%MSD	RPD	ACP %MS	ACP RPD
1,1-Dichloroethane	0.0	20	21	22	105	110	5	59-115	10
Trichloroethene	0.0	20	21	21	105	105	0	79-139	18
Tertachloroethene	0.0	20	21	21	105	105	0	50-141	11

SPK CONC = Spiking Concentration ($\leq$5 X PQL) ; PQL = Practical Quantitation Limit.
%MS = Percent Recovery of MS %MSD = Percent Recovery of MSD ; RPD = Relative Percent Difference.
ACP = Acceptable Range of Percent ; INITIAL RF_{ave} = Average Response Factor From Initial calibration;
DAILY RF = Response Factor From Daily Calibration; %RSD = Percent Relative Standard Deviation; R1 = Result of first analysis.

2 . Laboratory Quality Control check sample

Date Performed : 12/08/97
Batch # :
LAB Sample I . D . : OCA 3880

ANALYTE	SPK CONC	RESULTS	%RECOVERY	ACP %
1,1-Dicholoroethane	20	20	100	80- 120
1,1,1-Trichloroethane	20	18	90	80- 120
Bromoform	20	24	120	80- 120

ANALYST: Mitra Samiei

DATE: 12/11/97

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

8010 QA / QC REPORT

Reporting Unit : µg/kg

1 . Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Date Performed : 12/09/97
Batch # :
LAB Sample I . D . : OCA 200

Analyte	R1	SP CONC	MS	MSD	%MS	%MSD	RPD	ACP %MS	ACP RPD
1,1-Dichloroethane	0.0	20	21	21	105	105	0	59-115	10
Trichloroethene	0.0	20	21	22	105	110	5	79-139	18
Tertachloroethene	0.0	20	20	22	100	110	10	50-141	11

SPK CONC = Spiking Concentration ($\leq$5 X PQL) ; PQL = Practical Quantitation Limit.
%MS = Percent Recovery of MS %MSD = Percent Recovery of MSD ; RPD = Relative Percent Difference.
ACP = Acceptable Range of Percent ; INITIAL RF_{ave} = Average Response Factor From Initial calibration;
DAILY RF = Response Factor From Daily Calibration; %RSD = Percent Relative Standard Deviation; R1 = Result of first analysis.

2 . Laboratory Quality Control check sample

Date Performed : 12/09/97
Batch # :
LAB Sample I . D . : OCA 4198

ANALYTE	SPK CONC	RESULTS	%RECOVERY	ACP %
1,1-Dicholoroethane	20	22	110	80- 120
1,1,1-Trichloroethane	20	21	105	80- 120
Bromoform	20	24	120	80- 120

ANALYST: Mitra Samiei

DATE: 12/11/97

ORANGE COAST ANALYTICAL, INC.
3002 Dow, Suite 532, Tustin, CA 92780 (714) 832-0064 Fax (714) 832-0067
4620 E. Elwood, Suite 4, Phoenix, AZ 85040 (602) 736-0960 Fax (602) 736-0970

8010 QA / QC REPORT

Reporting Unit : µg/kg

1 . Matrix Spike (MS) / Matrix Spike Duplicate (MSD)

Date Performed : 12/11/97
Batch # :
LAB Sample I . D . : 97120193

Analyte	R1	SP CONC	MS	MSD	%MS	%MSD	RPD	ACP %MS	ACP RPD
1,1-Dichloroethane	0.0	20	21	21	105	105	0	59-115	10
Trichloroethene	0.0	20	21	21	105	105	0	79-139	18
Tertachloroethene	0.0	20	21	21	105	105	0	50-141	11

SPK CONC = Spiking Concentration ($\leq$5 X PQL) ; PQL = Practical Quantitation Limit.
%MS = Percent Recovery of MS %MSD = Percent Recovery of MSD ; RPD = Relative Percent Difference.
ACP = Acceptable Range of Percent ; INITIAL RF_{ave} = Average Response Factor From Initial calibration;
DAILY RF = Response Factor From Daily Calibration; %RSD = Percent Relative Standard Deviation; R1 = Result of first analysis.

2 . Laboratory Quality Control check sample

Date Performed : 12/11/97
Batch # :
LAB Sample I . D . : OCA 4198

ANALYTE	SPK CONC	RESULTS	%RECOVERY	ACP %
1,1-Dicholoroethane	20	19	95	80- 120
1,1,1-Trichloroethane	20	18	90	80- 120
Bromoform	20	20	100	80- 120

ANALYST: Mitra Samiei

DATE: 12/11/97

phone message

ORANGE COAST ANALYTICAL, INC.

~~PHONE MESSAGE~~

Initials: [redacted] mrk Date: 12-05

CLIENT: EKI CONTACT: Rob Hesse

PROJECT: Webb

Status: X In Progress ___Completed ___Upcoming/Future

Date Received: 12-05

Samples: Action Item: Turnaround:

Samples received but not on chain of custody (put on hold) & B-15-5.5, 14.5, 34.5, 48

B-17-56

B-18-6, 25.5

Containers Requested:
___vox vials
___glass jars
___500 ml plastic
___1 liter plastic
___1 liter glass
___trip blank
___Other_____

Method Shipment:
___cooler ___Fed-Ex ASAP
___box ___UPS
___Deliver by_____
___Will Call on_____
Include:
___Chain of Custody
___Blue Ice

Erler & Kalinowski, Inc.

Consulting Engineers and Scientists
2951 28th Street, Suite 1020
Santa Monica, California 90405
(310) 314-8855
Fax (310) 314-8850

FACSIMILE TRANSMISSION COVER SHEET

DATE: December 5, 1997 TIME: 1:52 PM

TO: Marie

FIRM NAME: Orange Coast Analytical

TELECOPIER NUMBER OF ADDRESSEE: 714-434-0067

FROM: Rob Hesse

TOTAL NUMBER OF PAGES TRANSMITTED INCLUDING COVER SHEET: 1

PROJECT: Webb PROJECT NUMBER: 961025.02

WE ARE SENDING YOU A COPY OF:

( ) Report
( ) Letter/Memorandum
( ) Specifications
( ) Other

DESCRIPTION:

Reporting information for 8010 analyses of samples collected on 12/02/97 and 12/03/97.

THESE ARE TRANSMITTED AS CHECKED BELOW:

( ) As Requested
( ) For Approval
( ) For Review and Comments
( ) For Information and Coordination

REMARKS:

Please report results of analyses with the following sample identification number change:

Change boring ID Number B-#-# to the format B#-# using the same ID numbers as indicated by the samples (e.g. B-14-10 will be reported as sample number B14-10). Many thanks.

CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST

Erler & Kalinowski, Inc.

Project Number: 961025.00
Project Name: WEBB
Source of Samples:
Location: 5030 FIRESTONE BLVD, SOUTH GATE

Analytical Laboratory: ORANGE COAST
Date Sampled: 12/2/97
Sampled By: ROB HESSE
Report Results To: STEVE MILLER
Phone Number: (310) 314-8855

Lab Sample I D	Field Sample I D	Sample Type	Number and Type of Containers	Time Collected	Analyses Requested (EPA Method Number)	Results Required By (Date/Time)
	B-15-10	SOIL	1 x BRASS	9:48	METHOD 8010	12/12/97
	B-15-16			10:30		
	B-15-20.5			10:45		
	B-15-26.5			11:20		
	B-15-31			12:05		
	B-15-35.5			12:50		
	B-15-40			13:40		
	B-15-44.5			14:10		
	B-16-6			16:00		
	B-16-11			16:06		

Special Instructions:

Relinquished By: Name / Signature / Affiliation	Date	Time	Received By: Name / Signature / Affiliation
ROB HESSE / [signature] /EKI	12/4/97	16:00	
	12-5-97	10:00 am	[signature]

CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST

Erler & Kalinowski, Inc.

Project Number: 961025.02

Project Name: WEBB

Source of Samples:

Location: 5030 FIRESTONE BLVD., SOUTH GATE

Analytical Laboratory: ORANGE COAST

Date Sampled: 12/2/97

Sampled By: ROB HESSE

Report Results To: STEVE MILLER

Phone Number: (310) 314-8855

Lab Sample I D	Field Sample I D	Sample Type	Number and Type of Containers	Time Collected	Analyses Requested (EPA Method Number)	Results Required By (Date/Time)
	B-16-16	SOIL	1 x BRASS	16:12	METHOD 8010	12/12/97
	B-16-21			16:22		
	B-16-26			16:30		
	B-16-31			16:32		
	B-16-35.5			16:55		
	B-16-41			17:00		
	B-16-46			17:08		
	B-16-51			17:15		

Special Instructions:

Relinquished By: Name / Signature / Affiliation	Date	Time	Received By: Name / Signature / Affiliation
ROB HESSE / [signature] /EKI	12/4/97	16:00	
	12-5-97	10:00 am	[signature]

CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST

Erler & Kalinowski, Inc.

Project Number: 961025.02
Project Name: WEBB
Source of Samples:
Location: 5030 FIRESTONE BLVD., SOUTH GATE

Analytical Laboratory: ORANGE COAST
Date Sampled: 12/3/97
Sampled By: ROB HESSE
Report Results To: STEVE MILLER
Phone Number: (310) 314-8855

Lab Sample I D	Field Sample I D	Sample Type	Number and Type of Containers	Time Collected	Analyses Requested (EPA Method Number)	Results Required By (Date/Time)
	B-17-6	SOIL	1 x BRASS	8:40	METHOD 8010	12/12/97
	B-17-11			8:50		
	B-17-16			9:10		
	B-17-21			9:20		
	B-17-26			9:30		
	B-17-31.5			9:50		
	B-17-36			10:00		
	B-17-41			10:10		
	B-17-46			10:23		
	B-17-53.5			10:35		

Special Instructions:

Relinquished By: Name / Signature / Affiliation	Date	Time	Received By: Name / Signature / Affiliation
ROB HESSE / [signature] /EKI	12/4/97	16:00	
	12-5-97	10:00am	M. VanLaanen

CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST

Erler & Kalinowski, Inc.

Project Number: 961025.02

Project Name: WEBB

Source of Samples:

Location: 5030 FIRESTONE BLVD., SOUTH GATE

Analytical Laboratory: ORANGE COAST

Date Sampled: 12/3/97

Sampled By: ROB HESSE

Report Results To: STEVE MILLER

Phone Number: (310) 314-8855

Lab Sample I D	Field Sample I D	Sample Type	Number and Type of Containers	Time Collected	Analyses Requested (EPA Method Number)	Results Required By (Date/Time)
	B-18-11	SOIL	1 x BRASS	13:25	METHOD 8010	12/12/97
	B-18-16			13:35		
	B-18-21			14:00		
	B-18-27			14:45		
	B-18-31			15:15		
	B-18-36			15:20		
	B-18-41			15:25		
	B-18-46			15:35		
	B-19-16			16:50		
	B-19-21			17:00		

Special Instructions:

Relinquished By: Name / Signature / Affiliation	Date	Time	Received By: Name / Signature / Affiliation
ROB HESSE / [signature] /EKI	12/4/97	16:00	
	12-5-97	10:00 am	M. Van Camp

CHAIN OF CUSTODY / SAMPLE ANALYSIS REQUEST

Erler & Kalinowski, Inc.

Project Number: 961025.02
Project Name: WEBB
Source of Samples:
Location: 5030 FIRESTONE BLVD., SOUTH GATE

Analytical Laboratory: ORANGE COAST
Date Sampled: 12/3/97
Sampled By: ROB HESSE
Report Results To: STEVE MILLER
Phone Number: (310) 314-8855

Lab Sample I D	Field Sample I D	Sample Type	Number and Type of Containers	Time Collected	Analyses Requested (EPA Method Number)	Results Required By (Date/Time)
	B-19-26	SOIL	1 x BRASS	17:05	Mentoo 8010	12/12/97
	B-19-31			17:10		
	B-19-36.5			17:20		
	B-19-41			17:25		
	B-19-46			17:30		

Special Instructions:

Relinquished By: Name / Signature / Affiliation	Date	Time	Received By: Name / Signature / Affiliation
ROB HESSE / [signature] /EKI	12/4/97	16:00	
	12-5-97	10:00 am	M. Van Conway

Environmental Geotechnology Laboratory

December 24, 1997

Erler & Kalinowski, Inc.
2951 28th Street, Suite 1020
Santa Monica, ca 90405

Attn: Mr. Rob Hesse

RE: LABORATORY TEST RESULTS/REPORT
Project Name: Webb
Project No.: 961025.02
EGL Job No.: 97-065-001

Gentlemen:

We have completed the testing program conducted on samples from the Webb project. The tests were performed in accordance with testing procedures as follows:

TEST	METHOD
Air Permeability	API RP40
Moisture Content & Density	ASTM D2937
Total Organic Carbon	Walkley-Black

Enclosed is the Summary of Laboratory Test Results. The invoice for services provided is also included.

We appreciate the opportunity to provide testing services to Erler & Kalinowsky, Inc. Should you have any questions, please call us.

Sincerely yours,

Jack C. Lee, PE, GE
Manager

REGISTERED PROFESSIONAL ENGINEER
JACK C. S. LEE
No. 2153
Exp. 3/31/99
GEOTECHNICAL
STATE OF CALIFORNIA

Environmental
Geotechnology
Laboratory

SUMMARY OF LABORATORY TEST RESULTS

PROJECT NAME: WEBB

EGL JOB NO.: 97-065-001

PROJECT NO.: 961025.02

CLIENT: ERLER & KALINOWSKI

DATE: 12-22-97

SUMMARIZED BY: M. TAN

BORING NO	DEPTH (FT)	MOISTURE CONTENT ASTM D2216 (%)	DRY DENSITY ASTM D2937 (PCF)	TOC WALKLEY-BLACK (%)	AIR PERMEABILITY API RP40	
					EFFECTIVE PERM (MILLIDARCY)	AIR CONDUCTIVITY (CM/SEC)
B-15	15	22.3	102.1	0.88		NO FLOW
B-15	31.5	35.8	82.8	0.96		NO FLOW
B-15	36	10.9	112.8	ND	452.7	3.0E-005
B-15	47.5	24.1	95.9	0.34		NO FLOW
B-16	16.5	26.6	90.3	0.18	0.7	9.4E-008
B-16	26.5	39.9	85.4	1.07		NO FLOW
B-16	36	7.0	101.6	0.10	1246.4	8.2E-05
B-16	46.5	25.3	105.8	0.36	0.4	5.2E-007
B-17	16.5	23.4	108.9	0.61		NO FLOW
B-17	26.5	38.1	89.3	1.11		NO FLOW
B-17	36.5	26.1	99.4	0.57	0.6	9.2E-008
B-17	46.5	21.5	108.0	0.58	1.1	1.4E-007

NOTES:

ND = NON-DETECTABLE

11823 Slauson Avenue, Unit 18, Santa Fe Springs, CA 90670 • Tel.: (562) 945-0689, Fax: (562) 945-0364

Appendix E

Laboratory Reports for Soil Geotechnical Analyses